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A WORLD-VIEW
THROUGH A REUNION OF
PHILOSOPHY & SCIENCE



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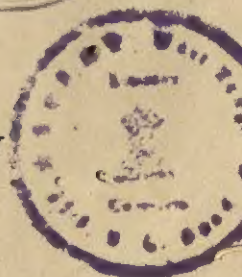
By
AJIT KUMAR SINHA



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Published by
Mrs. Anjali Sinha,
The Library of Philosophy,
39, S. R. Das Road, Calcutta-26
India.

6077

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Price :

Rs. 15.00

\$ 4.00

28sh.

Printed by Benoy Ratna Sinha,
BHARATI PRINTING WORKS,
141, Vivekananda Road, Calcutta-6.

Dedicated
to the memory of my mother
Suniti Manjari Sinha

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PREFACE

Expression is the nature of existence. Of different forms of existence on the planet earth human personalities are the most expressive who express themselves in diverse ways. I have chosen writing as a medium of expression; and like all human personalities I would like to have an audience, though in my case, a willing one. Whether the efforts that I have made in expressing this view and the efforts that my prospective audience will make in appreciating or rejecting it will have any abiding value only time will decide.

The view that I have expressed here is corroborated to a very great extent by the valid conclusions of sciences. Hence, the theory of reality described here is not far removed from Nature. Moreover, the definitions that I gave to the various constructs that I used in describing the nature of reality were not arbitrary, but they correspond with real meaning situations of Nature. Theories cannot be empirically confirmed if definitions of constructs of the former are arbitrary. I do not mean to suggest, however, that definitions of terms must be absolute and immutable. The definitions that I gave to the constructs of our theory are provisional in their nature until they are validated and established by the epistemology of sciences.

A human individual has an intermediate position between the small-scale and the large-scale phenomena of Nature and he knows almost as a matter of truism that his personality has a psycho-physical nature. The 'psychical' nature of a person is expressed through his teleological behaviour and the 'physical' aspect is represented by the mass of his physique. Likewise

small-scale and large-scale phenomena of Nature have both the aspects of dynamism and mass. I have tried to establish in this work that dynamic processes of small-scale and large-scale phenomena of Nature are not mechanical in their character, but rather they are teleological which I have referred to as 'psychical' and the volumes of mass of such phenomena which have spatial location I have referred to as 'physical'. I have further tried to show that creativity is necessarily and invariably associated with teleology. Evolution of living organisms and development of human civilization and culture demonstrate that there are different levels of creativity in Nature. Nobody can dispute that every phenomenon of Nature has some form of mass and spatial position, on the one hand, and dynamism, on the other. The main dispute may arise over the points whether the 'dynamic' aspects of various phenomena of Nature are 'teleological' and 'creative'. My thesis is that creative teleology is the central theme of reality. An attempt is made in this work to show as consistently as possible that creativity is the fundamental law of reality. That is why I have given an exposition of my view for appropriate evaluation by my prospective critics.

I express my immense gratitude to my father, Professor Jadunath Sinha, who most kindly went through the entire typescript of this work in spite of the fact that he constantly remains very busy writing his philosophical works. I also thank my little daughter, Miss Rita Sinha, who always took good care of me while I composed this work. So far as the flaws and blemishes of this work are concerned the responsibility is solely mine.

May 30th, 1959.

Ajit Kumar Sinha.

CONTENTS

	Page
PREFACE.	vii
CHAPTER I. Prologue	1
CHAPTER II. The Nature of Matter	20
CHAPTER III. The Nature of Living Phenomena	64
CHAPTER IV. The Nature of Human Personality	111
CHAPTER V. The Principle of Individuation	175
CHAPTER VI. The Nature of Human Freedom	220
CHAPTER VII. The Nature of Human Evil	254
CHAPTER VIII. Philosophy of History	268
CHAPTER IX. The Nature of Space-Time	312
CHAPTER X. The Problem of Personal Immortality	350
CHAPTER XI. The Problem of God	386
CHAPTER XII. The Problem of the Absolute	422

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261	8	world	universe
261	30	varior	various
263	1	incompatiable	incompatible

CHAPTER I

PROLOGUE

The drama of our intellectual history began with the appearance of the *homo sapiens* on the world's stage. When the *homo sapiens* first appeared on the world's panoramic stage amidst the medley of conscious and preconscious living phenomena his prime necessity was to tackle with the problems of existence and survival like all other living organisms. Nature sometimes nurtured him and caressed him with her soothing weather and abundant supply of health-giving food and drink, and sometimes threatened his existence by her devastating forces like lightning, thunder, cyclone and so on. Man was mystified by the benignant aspect of Nature and horrified by her scourging aspect. His first reaction was to recoil with anguish from the pernicious forces of Nature; and then finding Nature to be too powerful surrendered himself to the latter and considered her to be a mysterious power. That was man's initial defeat. But then man soon began his bold and triumphant march against the ravaging forces of Nature and fortified himself against her destructive forces to the best of his ability. He found that he could fortify himself best against the devastating forces of Nature by gaining some knowledge of the nature of natural phenomena through some sort of native guess work. His will-to-exist naturally gave rise to will-to-know, and his will-to-know was naturally followed by his will-to-create. These innate and natural tendencies in man are inseparably linked up with one another. As a natural consequence of his will-to-know the nature of natural phenomena he constructed his naive world-picture. The only method of knowledge that he had at his command at the time was naive observation admixed with primitive imagination. His philosophy began with wonder. In the initial stages of his philosophical enterprise he was mainly concerned with cosmological and ontological problems. He tried to guess how the universe originated and made some hazy conjectures about the ultimate stuff of the universe. He did succeed in constructing a world-picture though it was very native and childlike. Different

world-pictures, sometimes radically different from one another, were suggested by different philosophers down the ages, and thus the materials for the introductory chapters of the history of philosophy accumulated. During this period certain enterprising persons discovered certain methods with the help of which they could know certain aspects of Nature with greater certainty and exactness than some of their intellectual fellow-beings more given to speculative thinking. They were the first scientists of the world. It may be mentioned here that these early scientists were not hostile in their attitude towards their contemporary philosopher brethren, but on the contrary, the former were quite often friendly towards the latter. Very often some of these scientists were themselves philosophers. They were scientist-philosophers. Aristotle was one of them. During this period science and philosophy formed a part of the same body of knowledge. Scientific knowledge merged naturally into philosophical speculation and supplemented the latter. Science was physics and philosophy was metaphysics or the knowledge that transcended physics. In other words, philosophy transcended science even though it incorporated scientific truth. So far there was unity between science and philosophy. Both science and philosophy co-operated in presenting a more or less consistent world-view.

A little later sciences took rapid strides forward and made some of the most startling discoveries concerning the various phenomena of Nature, and in due course of time natural science subdivided itself into various sister-sciences and tried to probe into the secrets of the various phenomena of Nature and each science made persistent efforts to obtain specialized knowledge within its own realm of investigation. Philosophy, on the other hand, could not keep pace with the rapid developments of natural sciences, and perhaps to compensate its deficiency compared to the progress of various sciences it soared high up into the regions of speculation and abstraction and gradually it became far removed from Nature. Sciences took galloping strides forward and made tremendous progress while philosophy lagged behind. In course of time philosophy and sciences parted company of each other and the gulf between the two grew wider and wider. There

were times when philosophers and scientists considered each other as hostile enemies. Those were the periods of intellectual schism amongst scholars who were sowing seeds of divergence. Consequently philosophers and scientists instead of co-operating amongst themselves for investigating into the ultimate constituents of the various phenomena of Nature and the laws governing them they looked down upon one another with suspicion and mistrust and each considered oneself as intellectually superior to the other. As a natural consequence of this lack of co-operation and mutual distrust the faint rays of light that they threw upon the ultimate principles of Nature instead of converging in giving a unified picture of the world appeared to diverge widely. It was the most unfortunate period in man's search for the unfathomed secrets in the various phenomena of Nature. But soon philosophers and scientists realized the folly of their intellectual arrogance and they found themselves lost and bewildered in the perplexing labyrinths of the various phenomena of Nature whenever they tried to probe into its ultimate constituents or the laws of their behaviour. Experience made them wiser and gradually they developed the virtue of intellectual humility. They developed the courage of expressing frankly that they knew very little or nothing of the intricate problems of the various phenomena of Nature. Scientists realized the limitations of scientific analysis and they turned to philosophy for consolation and some of them were bold enough to philosophize on the basis of the results that they obtained through scientific investigation. Certain philosophers, on the other hand, could realize the haziness of metaphysical doctrines and felt frustrated by the obscurity of metaphysical statements, and hence, they rejected them as meaningless propositions and sought refuge in logical analysis of sentences in philosophy and believed in the superiority of the methodology of sciences as valid source of knowledge, particularly, that of physics. Gradually a few scientists infiltrated into the realm of philosophy and a few philosophers bashfully dabbled in some of the constructs of pure sciences. Philosophers and scientists gradually forgot their past differences and came closer to one another with an attitude of reconciliation. This healthy attitude on the part of philosophers and scientists

marked the beginning of a new era of reunion between science and philosophy. Another important change took place in scientists' methodology of investigation of the various phenomena of Nature. So far scientists were mainly concerned with the description of the various phenomena of Nature; they did not have suitable methods at their command for unravelling the first principles of Nature. If at all they could make analysis of causal relations between events in the phenomena of Nature, they could find out only the too apparent and superficial causal relations. Moreover, the causal relations that they discovered between events in the various phenomena of Nature were more of a hypothetical nature than of real and objective connection. Sciences which were so far primarily descriptive studies gradually became causal disciplines. Physics was first amongst pure sciences to achieve some success in this direction, and other sciences like the biological and the behaviour sciences followed suit. As scientists of different branches of sciences were engaged in the analysis of causal relations between events in the various phenomena of Nature they discovered that the constructs of the respective fields had some sort of relation with the constructs of sister sciences. As a result of this discovery sciences which were hitherto wide apart with respect to their scopes came closer to one another. Thus close link was established between physics and biology, and chemistry and biology and thereby giving birth to new sciences like biophysics, biochemistry and so on. Obviously, it was the beginning of a new era characterizing convergence of knowledge for the solution of the ultimate problems of Nature through the confluence of various departments of study. Scientists of the various branches of sciences sometimes made conjoint efforts to throw light on the ultimate problems of Nature and at times their efforts were crowned with partial success. Certain theories in various sciences which were hitherto considered to be final and immutable were found to be basically defective and they were mostly discarded as obsolete theories. In this way Euclidean geometry, Newtonian physics, Darwinian biology, and the like which were hitherto regarded as more or less immutable and final theories turned out to be mere superficial interpretations of the various phenomena of Nature and these theories were replaced

by many other succeeding theories. Since the immutability and finality of theories concerning the various phenomena of Nature were sometimes disputed the theories that replaced the earlier ones it became quite evident that definitions of constructs were not final and immutable. Since human knowledge was advancing with tremendous pace it became quite necessary to define constructs of a particular science only tentatively and sometimes arbitrarily. In other words, constructs were defined in certain specific ways to suit certain theories. Consequently, the definition of a construct which holds good in one theory may not be appropriate for some other theory. Thus, scientists landed in a state of great perplexity and indecision due to continuous replacement of one theory by another. It was a stage of haziness and indecision for almost all sciences. Nevertheless, it was not a stage of total confusion and obscurity. Rays of hope and promise could be found in every branch of science in spite of apparent haziness. Each science was able to formulate at least some valid constructs or the laws governing them. It was further found that constructs of one science had some affinity with or even relation with constructs of other sister sciences. Moreover, it was observed that the laws which governed the constructs of one science also governed the constructs of other sister sciences in a more or less similar way. Some similarity was observed between the behaviour of non-living, living and conscious phenomena. It also appeared to some of the scientists in the various branches of sciences that the ultimate constituents of non-living, living and conscious phenomena were perhaps identical or at least similar in nature. These were matters of great philosophical importance. It became quite obvious that there was common ground between the various sciences which hitherto appeared to be completely isolated like watertight compartments. The barriers which marked off the respective domains of the various sciences gradually crumbled down leading to the progressive confluence of sister sciences through the overlapping of borderline problems. Likewise it was found that there was no strict line of demarcation between philosophy and science even though they employed different methods for investigating into the problems of the world. It gradually became quite obvious that both philosophy and science were making persistent efforts to

understand the various problems of Nature in their respective ways even though they were adopting slightly different methodology of knowledge. It became quite evident that all branches of knowledge were concerned directly or indirectly with the investigation of the ultimate principles of Nature. Rapid advancement of philosophical and scientific knowledge clearly demonstrated that there was progressive convergence of human knowledge for clearer and wider comprehension of the various problems of Nature.

Progressive confluence of the various departments of knowledge heralded the beginning of a new scene in the drama of man's intellectual history. The chief aim of philosophers and scientists is now to find out the basic constituents of the various phenomena of Nature and the laws in accordance with which they behave. Perhaps the only difference that is found between the attitude of philosophers and scientists consists in the fact that whereas philosophers generally try to have an intuitive apprehension or intellectual construction of the entire reality first and then they try to apply the general theory of reality to the specific phenomena of Nature, scientists try to analyse the building blocks of Nature first and then they try to give a general interpretation of reality on the basis of their scientific results. It is obvious, then, that philosophers and scientists are concerned with almost the same problems though their methods of approach are slightly different. It is most encouraging to note that larger and larger number of intellectuals are realizing the importance of the fact that there is progressive convergence of knowledge through increasing conflux of the various branches of sciences and philosophy for gaining more and more comprehensive and clear perspective of reality. This seems to be the present state of human knowledge.

A very sketchy resume of the intellectual history of mankind was given so far. We shall now make an attempt to give a brief statement of our philosophical standpoint which will be worked out in detail throughout this work. We shall make a statement of our philosophical standpoint from three different angles, *viz.*, epistemological, ontological and axiological points of view.

Firstly, our preliminary method of approach to the problems

of reality is pre-eminently the intuitive method. It is our strong conviction that the ultimate principles of reality are revealed to the receptive human personalities. It is, however, not necessary that philosophers should have perfect and comprehensive intuitive apprehension of the revealed ultimate principles of reality. As a general rule philosophers mostly have a partial apprehension of the ultimate principles of reality which the former apprehend through their unique standpoints. Consequently, they have generally a most faint glimmering apprehension of the ultimate principles of reality. We for our part do not hope to present any better picture of reality than what the philosophers adopting the intuitive method of apprehension did in the past. However, our present effort is not a mere duplication of philosophical doctrines reached in the past by the brilliant galaxy of philosophers down the ages. We believe that our philosophical standpoint is more simple, intelligible, realistic and consistent than the philosophical doctrines enunciated by the great philosophers of the past. However, it must be repeated once again that the world-view that we are trying to present here is nothing but an attempt at a most fragile reconstruction of an intelligible picture of reality on the basis of the most faint intuitive glimpses of the ultimate principles of reality. The frailty of our philosophical standpoint is due to the fact that it is basically a human effort with insensitive receptivity of the revealed ultimate principles of reality. However, there is some ray of hope that the philosophical superstructure that is being constructed here on the basis of the most faint intuitive apprehension of some of the ultimate principles of reality is not a mere figment of the imagination, but it certainly embodies some meaning however hazy and fragmentary it may be.

To repeat once again, the philosophical methodology employed here to start with was basically the intuitive method of apprehension of the ultimate principles of reality. But since this method is pre-eminently for personal experience the information obtained through it cannot be easily communicated to others through ordinary means of communication. That is the reason why we shall employ whenever needed all possible *a priori* and *a posteriori* methods that are ordinarily employed by philosophers and scientists. The *a posteriori* methods can be employed with greatest

ease and facility, the meanings of the results of their applications can be easily understood, and they have greater popular appeal. Consequently, we shall employ empirical methods of all possible varieties whenever needed including the observational, introspective, operational, historical methods and the like. Further, we shall also employ the different varieties of *a priori* methods whenever needed including logical analysis, mathematical deductions and the like. The *a priori* method is comparatively more difficult than the *a posteriori* method and it is difficult to understand the philosophical implications of this method. The *a priori* method does not seem to be thoroughly devoid of philosophical significance. It seems that *a priori* modes of expressions are the patterned manifestations of the orderly structure of personality and its orderly behaviour. For instance, logical and mathematical structures are perhaps in themselves meaningless patterns, but they derive their meanings from the personalities that create them with some end in view and also from certain aspects of Nature to which they conform. It appears, therefore, that there are certain dynamic patterns in the modes of expressions of personalities and there are also certain dynamic patterns of behaviour in the various aspects of Nature and the aforesaid logical and mathematical structures merely correlate the patterned expressions of personalities with the patterned modes of behaviour of the various phenomena of Nature. In other words, logical and mathematical systems are the various intellectual devices for correlating the dynamic patterns of knowing processes with the dynamic patterns of the various phenomena of Nature towards which thought processes are directed. Logical and mathematical patterns have an element of æsthetic appeal mainly because they are the expressions of the orderly working of personalities. It is recognized by a majority of outstanding mathematicians that mathematical patterns have an element of beauty; consequently, clumsy mathematical patterns can have no permanent place in the intellectual world. Sound philosophical judgment consists in prudently evaluating whether logical and mathematical devices properly correlate the dynamic knowing processes of personalities with the dynamic patterns of the various phenomena of Nature. As an epistemological method the *a priori* devices have great

promise and versatility even though there are always considerable risks in the suitable application of these devices to the various phenomena of Nature. In this respect the *a posteriori* method seems to be more satisfactory than the *a priori* method because there are lesser chances of error in the former method. However, the *a priori* and the *a posteriori* methods of knowledge are mutually complementary so that the inadequacy of the one method is made up by the other. It may be pointed out here that the empirical method including all its varieties is a great asset to human knowledge, and various data drawn from the employment of this method greatly strengthen the position of our philosophical standpoint. The empirical method gives support to our intuitive method of approach to the various problems of reality. The ultimate principles of reality which are faintly grasped through intuitive apprehension are corroborated and confirmed by empirical verification. In our view, therefore, empirical and intuitive methods supplement each other. It may be pointed out here that the intuitive method of apprehension is pre-eminently suitable for intimate personal experience, and the empirical method including all its varieties is particularly suitable for persons less given to philosophical speculation. It does not mean, however, that philosophers employing the intuitive method cannot profit by empirical methods and that the unphilosophical persons cannot employ and profit by the intuitive method of apprehension. The faith of philosophers in the ultimate principles of reality obtained through intuitive apprehension may be strengthened by empirical confirmation, and likewise the faith of scientists and common people in empirical knowledge can be further enhanced by gaining wider perspective of reality through the channel of intuitive apprehension. It is obvious, then, that we employ an all-inclusive epistemology in our philosophical doctrine which recognizes the importance of every type of epistemology. If we are permitted to employ a little picturesque language, we may express our ideas as follows: The intuitive method of apprehension is like an arrowhead pointed downwards from the Absolute or an expression thereof to Nature of which knowing personalities are also aspects, and empirical methods are like arrows ascending upwards from Nature in the direction of the Absolute. The triumph of know-

ledge is reached through the meeting of arrowheads from opposite directions. In our view, therefore, the acme of human knowledge is reached through confluence of the two extreme methodologies of knowledge, *viz.*, intuitive and empirical.

Let us now briefly state what was faintly revealed to us of the nature of the various aspects of reality. Reality in our view is infinitely complex organization of simple entities. We shall call this organization the Absolute. The Absolute is omniscient since it is an organization of infinite complexity; and in our view the intensity of consciousness is dependent upon the degree of complexity of a dynamic organization of simple entities. The intelligence and consciousness of the Absolute is infinite and all-inclusive. If we are permitted to use a very childlike analogy, we may say that a great personality like Shakespeare or Einstein has much clearer and wider apprehension of the problems of life and reality than a person with mediocre intelligence. A man of great wisdom has deeper insight into the problems of reality and a wider perspective of reality than the range and depth of knowledge of a mediocre person. Extending the same analogy still further we may say that the Absolute which is an infinitely complex organization has infinite and all-inclusive knowledge. In other words, it has omniscience. Further, the Absolute is not only of the nature of infinite consciousness and knowledge, but it is also creative in its nature. Complexity and creativity are co-existent. Finite personalities who are also complex organizations are also creators of values in their own spheres. But their value creations have a relatively narrow range. The Absolute being an infinitely complex organization has infinite creativity. It is the creator of infinite values. Its creative upsurge is incessant since creative teleology constitutes its very nature. Its value creations are the expressions of its exuberance of bliss. Cosmic values of the Absolute constitute an infinite series of finite values in the infinite field of reality. The universe of which we are the evolutes is one of the expressions of the Absolute's creative teleology. It has value for the Absolute. Finite personalities are generally incapable of thoroughly grasping the full implications of the world as a value owing to their limitations of knowledge. They merely search for the implications in the various

phenomena of Nature which are for the former symbols rich in meaning. Philosophers and scientists merely observe the symbols with unintelligible code-scripts, as it were, and it is the sole effort of the former to try to decipher the code-scripts that they observe in the various phenomena of Nature.

Our universe is only one of the values out of the infinite number of values of the Absolute. The values are being perpetually created by the Absolute. The Absolute perpetually goes on creating values, and the values which are once created continue to exist as relics of the past. The world partakes of the creative teleology of the Absolute apart from the innate teleology of the ultimate constituents of the former. That is perhaps the reason why the world tries to turn back upon its creator realize it through some of its most complex evolutes. In our view, therefore, the Absolute is the infinite and eternal creator of values. Reality in its general sense is the Absolute together with its values and the infinite field of the latter's comprehension. Reality in its special sense is the Absolute's infinite field of comprehension and creativity. The world that we know is only one of the values out of the infinite number of values. Nature is the observable aspect of our world. The evolutionary process that goes on in Nature is only one of the processes that we know out of perhaps infinite number of such processes similar to or different from the one that we know.

The ultimate constituents of reality in general sense are psycho-physical entities. They are the most simple entities of reality. Psycho-physical entities are the building blocks of reality. They are simple, eternal and uncreated. They have a dual nature, namely, physical and psychical. Physical and psychical aspects of psycho-physical entities are not joined or united together by any third principle, but rather they are the two aspects of the same entity. The physical aspect of psycho-physical entity is Being and the psychical aspect is Becoming. Psycho-physical entity, then, is at once Being-Becoming. The physical aspect of psycho-physical entity is the principle of position and the psychical aspect is the principle of dynamism. The principle of stability is the expression of the principle of position and complexity, is the expression of the principle of dynamism. Creativeness is the

expression of complexity and uncreativity is the expression of stability. Deterministic laws are the expressions of the principle of position and the indeterministic laws are the expressions of the principle of dynamism. But since creative teleology constitutes the very nature of psycho-physical entities indeterministic laws always implicitly or explicitly predominate over the laws of determinism. Creativeness always involves novelty and originality; consequently, creative upsurge always surpasses deterministic laws and expresses itself in accordance with indeterministic laws. However, sometimes the principle of position exerts its overbearing impact upon the principle of dynamism in a conglomeration of psycho-physical entities, and thereby reduces the creativeness of the dynamic organization to the lowest level through partial neutralization of the principle of dynamism of the conglomerating psycho-physical entities. In our view, will is the expression of the psychical aspect and inertia is the expression of the physical aspect of a psycho-physical entity. Further, in our view consciousness is the expression of the physical aspect of a psycho-physical entity. Likewise bliss, joy and happiness are the expressions the psychical aspect; and pain, suffering, agony and the like are the expressions of the physical aspect of a psycho-physical entity. Finally, truth, knowledge and beauty are the expressions of the psychical aspect; and error, ignorance and ugliness are the expressions of the physical aspect of a psycho-physical entity.

Psycho-physical entities are the ultimate constituents of the entire reality. They are the common elements of the dynamic organization of the Absolute, and the infinite number of cosmic values, our world, Nature and the various phenomena of Nature. They are all identical in nature. There is neither any qualitative nor quantitative difference between psycho-physical entities. Differences or diversities that are observed in Nature are due to the different types of dynamic organizations of psycho-physical entities. The various dynamic organizations of psycho-physical entities differ from one another by virtue of their different degrees of complexity. It is because of complexity that different orders of existence have emerged in the course of evolution in Nature. The various evolutes of Nature have different degrees of complexity, and hence, they have different degrees of creativity.

Levels of creativity of dynamic organizations of psycho-physical entities are mainly determined by their innate teleology and their acquired teleology conforming to their general pattern of innate teleology, and partially determined by the teleology of the Absolute lingering most faintly in our world which was created as one of the cosmic values by the Absolute and now continuing as a remnant. We know that the teleology of the Absolute lingering faintly in our world as a memento of the Absolute's past value has partial influence on the creativeness of the dynamic organizations of psycho-physical entities because we find that there is progressive advancement and refinement of intellectual, ethical and æsthetic values in the world by creative personalities in spite of occasional setbacks. Whatever advancement we have in human society in connection with general refinement and subtlety of values is due to the partial influence of the lingering teleology of the Absolute in our world still continuing as a cosmic value of the past. It is evident, then, that the Absolute does not any longer influence the creative personalities and our world directly by its teleology, but rather its influence is most indirect since our world which was once created as a cosmic value and which is now continuing as a relic partook of the creative teleology of the Absolute and now it is partially influencing the teleology of creative personalities through its cosmic teleology which is still lingering in it. Had the Absolute exerted the influence of its creative teleology on finite personalities and our world, we would have most clearly and vividly known of the creative teleology of the Absolute, at least, the creative purpose of its present value. But the fact is that we are not vividly aware of the creative teleology of the Absolute because we are merely evolutes of one of the past values still continuing as a remnant. But we can say on the basis of our interpretation of the various symbols observed in Nature that creative teleology constitutes the essential nature of the Absolute. The perennial creation of novel and original values is due to the Absolute's creative teleology. The incessant creation of cosmic values by the Absolute is due to its perennial romantic agony. The Absolute cannot but create cosmic values. In the Absolute the psychic aspects of its dynamic organization of psycho-physical entities contribute to the former's

bliss and the physical aspects contribute to its agony. Consequently, the Absolute writhes, as it were, with blissful agony for incessantly creating novel and original values. That is the reason why it creates one value after another. Our world together with its evolutes partook of both the blissful and agonizing aspects of the Absolute in the form of the feelings of pleasure and pain of various kinds. The happiness of finite personalities is but the infinitesimal fraction of the exuberance of bliss of the Absolute. The value creations of the Absolute are the expressions of its overflow of bliss. The blissful aspect far surpasses the agonizing aspect in the nature of the Absolute, since the infinite complexity and creativity of the latter predominates over its principle of stability.

Cosmic values do not emerge as full-grown creation from the Absolute like Athena who sprang full-fledged from the forehead of Zeus. The Absolute exerts its creative will upon simple, eternal and uncreated psycho-physical entities and transforms them into dynamic organizations of various degrees of complexity. The various cosmic rganizations are the values of the Absolute in the sense that the former constitute the actualizations of the latter's ideas. The Absolute exerts its will upon the discrete psycho-physical entities in its infinite field of comprehension and actualizes its ideas into values. After one idea of the Absolute is actualized in the form of a cosmic value, it goes on to create another cosmic value through the actualization of another novel and original idea, and so on the creation of cosmic values goes on ceaselessly.

There are different degrees of complexity of dynamic organizations of psycho-physical entities in reality. The Absolute is the dynamic organization of the maximum degree of complexity; consequently, it has the maximum degree of creativity. As an infinitely dynamic organization of psycho-physical entities it was not created by any other creator. It is the primordial organization of psycho-physical entities. The very nature of simple, eternal and uncreated psycho-physical entities necessitates that there be an infinitely complex organization with maximum degree of creativity. Reality in its special sense is the infinite field of Absolute's creativity. The psycho-physical entities in the infinite

field of the Absolute's comprehension are unorganized. The infinite field of comprehension of the Absolute is not a kind of reality other than the Absolute itself. The Absolute and its infinite field of apprehension are the two different aspects of the same reality. The Absolute and its infinite field of apprehension are different in the sense that they express different degrees of concentration and emphasis of psycho-physical entities. The Absolute is that aspect of reality wherein the complexity of psycho-physical entities is maximum and creativity is supreme; and the Absolute's infinite field of apprehension is that part of reality in which psycho-physical entities are discrete and there is least emphasis on creativity. It is evident, then, that the Absolute's infinite field of apprehension is inseparable from the Absolute itself. The present cosmic value created by the Absolute has lesser degree of complexity than its creator itself. It has perhaps vivid comprehension of the former's creative teleology. Presumably it clearly grasps the Absolute's nature, or at least an aspect of it, since it is the actualization of the Absolute's creative teleology and being so it has shared in the latter's creative teleology, and therefore, it has the capacity for turning back upon its creator and thereby it has the capacity for vividly comprehending the Absolute's present purpose of creation. We believe that the current cosmic value of the Absolute is more complex than the cosmic values of the past, because the Absolute being pre-eminently a creative personality goes on creating values of increasingly more complex, richer and newer orders than the preceding ones. The earlier cosmic values which still persist as relics have lesser degree of complexity than the current value of the Absolute because the earlier values which shared in the creative teleology of the Absolute being the latter's expressions have considerably faded away in their brilliance and vivacity like the pallor of disintegrating fossils. Dynamic organizations which gradually evolve out of our world have perhaps very low degrees of complexity compared to other dynamic organizations in reality. Atomic systems are perhaps dynamic organizations of the minimum degree of complexity in our world. Dynamic organizations of psycho-physical entities of greater and greater complexity are progressively emerging out of the less complex dynamic organi-

zations in the course of evolution in Nature. Thus living cellular structures emerge out non-living matter and likewise more complex organisms evolve out of less complex organisms. Since dynamic organizations of varying degrees of complexity have evolved our world in which the creative teleology of the Absolute still lingers most faintly, the evolutes of the highest degree of complexity have some faint and fragmentary reminiscence of the Absolute's idea which was actualized in the form of our world. That is the reason why there is some correlation between the patterned structures of the various phenomena of Nature and the patterned behaviour of human personalities including the *a priori* patterns of logical and mathematical expressions. That is also the reason why the various phenomena of Nature can be explained most suitably with the help of certain types of mathematical patterns that human personalities create. Logical and mathematical patterns are the expressions of the patterned way of thinking which in their turn appear to be nothing but the most faint and fragmentary relics of the dynamic patterns of the Absolute's creative teleology that still lingers most hazily in our world and which human personalities have inherited from Nature out of which they have evolved. This is true of all human expressions whether they are intellectual, ethical or æsthetic. The only region which is perhaps devoid of any kind of organization is the infinite background of reality which consists of discrete psycho-physical entities. Reality in its special sense is the infinite background of psycho-physical entities on certain cosmic regions of which the Absolute perennially exerts its creative will and actualizes its ideas into values. Cosmic values are finite in the infinite field of reality. However, the Absolute cannot be regarded as finite because reality which is the field of the former's comprehension and perennial creative activity is infinite. The dynamic organization of the Absolute is indestructible because the Absolute's intelligence, cosmic consciousness, blissful agony, and creative teleology are of the highest possible order, and as a result of which its creative upsurge is perennial. The Absolute together with its values past and present and its field of apprehension is infinite. The nature of the Absolute and its perennial actualization of ideas into values can never be fully comprehended

by human personalities at any stage of intellectual development. Human personalities can merely have most faint and fragmentary glimpses of the various phenomena of Nature and they can construct a view of reality on the basis of faint glimpses of the ultimate principles of Nature through intuitive apprehension. Those philosophers who claim that they were able to comprehend the nature of reality fully and completely are in our opinion guilty of intellectual arrogance. A vast majority of philosophers are guilty of this charge. This colossal mistake on the part of such philosophers is due to the fact that they directly or indirectly believed that reality was static. In our view reality is dynamic and perennially creative; and hence, it is impossible in principle to fully comprehend the nature of reality. All that philosophers and scientists are persistently trying to comprehend is the nature of our world which is but an antiquated value of the Absolute still persisting as a remnant; and far less do they try to comprehend the nature of the Absolute and the cosmic values that it perennially creates. In this work, therefore, we shall try to make an attempt with considerable trepidation to present a world-view mainly on the basis of our faint intuitive apprehension of the ultimate principles of the various phenomena of Nature and partly on the basis of our interpretation of the results of various sciences. We shall, therefore, primarily deal in this work with some of the philosophical problems of human life and the world, and only incidentally with the problems of reality, God and the like towards the end of this work. Whatever philosophical interpretation we shall offer in connection with human problems and problems of our world will be of the nature of mere suggestions for further examination and closer investigation. We should, therefore, like to make it very clear that there is no element of finalism in our philosophical interpretation of the world and human life that we are trying to present in this work. Since in our view reality is fundamentally dynamic we should also like to make it very clear that our view always leaves ample room for correction whenever certain constructs are found to be invalid and for further incorporation of new information whenever it is available. To be more precise, we are trying to suggest in this work a method of approach to the

problems of human life and the world rather than a fully worked out theory of reality. If at all this method of approach to the problems of human life and our world be considered a philosophical theory, then it should better be called *a* theory rather than *the* theory of the world.

Finally, a passing reference will be made on the nature of axiological problems since our philosophical standpoint does not exclude any problem connected with our world and human life. However, since the present work is mainly concerned with the presentation of a general world-view we are not mainly concerned here with axiological problems even though we shall very often make passing references to different varieties of values both human and cosmic. In our view value is a meaningful organization. A value is the actualization of an idea by a creative personality or something analogous to it. It is the expression of creative teleology. It partakes of the creative teleology or at least an aspect thereof however faintly and partially. It has meaning mainly with reference to its creator. It has also meaning with reference to its appreciators. But it has perhaps very little meaning in itself apart from the meaning it receives from the teleology of its creator. This is true mostly of cosmic values. But human values have generally very little or no meaning in themselves mainly because the meanings they receive from the teleology of their creators are mostly weak in intensity and vivacity. For instance, a mathematical equation has perhaps no meaning in itself and for itself, but perhaps the Holy Cross of Jesus Christ has some meaning in itself and for itself. In contrast with human values the current cosmic value of the Absolute has perhaps meaning in itself and for itself because of the great intensity and vivacity of the meaning that it receives from the creative purpose of the Absolute. However, in human expressions also the meanings that teleological personalities impart to values linger for some time at least in intellectual and æsthetic values. The meanings of intellectual and æsthetic values are intelligible only to their creators and appreciators. The equations of physics have no meaning for savages for the latter are not appreciators of physics. In our view, therefore, value has *referential* meaning implying thereby that value has meaning

only with reference to someone. We believe that richness and vivacity of meaning in values do not last for ever, but that they fade away in their brilliance like the pallor of senility. However, we need not dwell on this point any further because we shall not specifically deal with the problems of value in this work.

In sum, the present work is mainly a philosophical one in which we have tried to glean the ultimate principles of the various phenomena of Nature. We have recognized the importance of every branch of knowledge which gives us some information at least, however faint, fragmentary or distorted on the various phenomena of Nature. We have primarily made an attempt to glean relevant information from the results of the most laborious and persistent researches of scientists and philosophers with a view to presenting a consistent world-view by correlating the fragments of correct information into an intelligible body of knowledge. Philosophers and scientists gradually and progressively build up ever-expanding body of knowledge very much like coral insects which build up slowly but surely coral islands from the bottom of oceans. Perhaps we are at an advantageous position since we are standing on a stupendous tower of knowledge, as it were, built most laboriously and patiently by philosophers and scientists down the ages. We have, therefore, a lot of relevant information about some of the ultimate principles of the various phenomena of Nature which our predecessors did not have. That is perhaps the reason why we can aspire to have a more clear and comprehensive view of our world and reality than our predecessors because we are living at a period of tremendous scientific discoveries and philosophical acumen. It is our sincere hope that we and our successors will perhaps be able to present a more consistent and intelligible world-view than what our predecessors were able to do in the past. So far as the present work is concerned we are merely trying to suggest a world-view through a reunion of scientific and philosophical knowledge.

CHAPTER II

THE NATURE OF MATTER

The history of physics is chequered with startling discoveries. In the modern times physicists have arrived at a stage of great suspense. The contemporary physicists are experiencing great difficulty in giving a satisfactory explanation of certain aspects of the physical phenomena; and if any major discovery is made in future it may be highly revolutionary in character perhaps necessitating radical modification or even abandonment of some of the earlier constructs.

From the dawn of human history some of the philosophers tried to give a scientific explanation of the universe. The aim of the early philosophers was to find out some ultimate substance of the universe. Different interpretations of reality were given by different philosophers. Amongst the early philosophers Democritus believed that everything in the universe was composed of atoms which were physically indivisible. Atoms were considered to be physically indivisible because there was no empty space inside them. They were completely filled bodies, and hence, they could not be divided. Democritus thought that atoms moved in empty space. He for the first time innovated the idea of empty space in order to account for the motion of atoms in the former. He believed that there were only two basic realities, *viz.*, atoms and empty space. Atoms are separated by empty space. Infinite number of atoms of innumerable shapes and sizes moved perpetually in infinite void. Atoms existed from eternity for they were uncreated, and consequently, they could not be destroyed.

The doctrine suggested by Democritus may appear to be naive and childlike at the first sight. But considering the age in which the doctrine was suggested the view of Democritus was sufficiently bold and suggestive. In modern times, however, revolutionary changes have taken place in the realm of physics, and remarkable changes have taken place in the concept of matter.

The recent developments in physics are briefly summarized in the light of its historical background in the following pages.

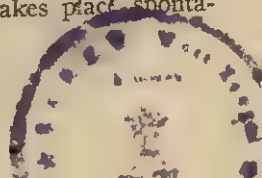
Rontgen was one of the forerunners of the new physics. He proved by means of his X-ray tubes that material particles were extremely subtle and they could filter through metal plates. It was observed that photographic plates which were kept in darkness were befogged when they were placed near X-ray tubes. The X-ray is so subtle that it can penetrate through a metal plate. Rontgen's discovery, therefore, proves that material waves are extremely subtle and active. His discovery of X-ray paved the way for the discovery of the radio-active phenomena.

Bequerel was the first physicist to discover the phenomenon of radio-activity. He thought that X-rays had something to do with the luminosity that appeared in the discharge of X-ray tubes, and he tried to find out whether other material bodies exhibited a similar luminosity. He discovered that uranium emitted rays from its own body which affected covered photographic plates when they were placed near the former. The emission of rays from uranium was found to be quite spontaneous. Bequerel further observed that certain other heavy elements had the remarkable power of sending forth rays continuously without any stimulation from outside. Bequerel's experiments were corroborated by the researches of Curie on radium. Curie found that radium emitted rays from its own body and it eventually disintegrated due to continuous emission of rays. Radium was transformed into lead through the process of radiation. The phenomenon of radio-activity, therefore, proved that matter had spontaneous activity and that it was also alterable.

Rutherford gave a still more startling information about the nature of radio-active substances. He observed that radiation from radio-active substances was not only spontaneous but also apparently capricious. He found that radiation from thorium oxide varied in a very capricious manner. Radiations from thorium compounds were radio-active and they behaved like gas. Rutherford found that a radio-active substance was transformed into another substance as a consequence of continuous emanation of rays. For instance, radium disintegrates and is gradually transformed into lead. This transformation takes place sponta-

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neously without any need of experimental interference. Rutherford suggested that nuclear matter was held together by strong electrical forces and that the nucleus of an atom could be bombarded with nuclear particles of great energy. Rutherford first gave a planetary model of an atom.

The history of new physics reached the acme of brilliance with the formulation of the quantum theory by Max Planck. He observed that radiation was a universal feature of all forms of matter. He also found that radiation of matter was not like a continuous stream, but it took place in units or energy packets. However, all energy packets are not of the same size, but their sizes vary according to the frequency of their oscillations. The ratio of energy to frequency is constant. Energy quanta are emitted by hot bodies; and hence they are of the nature of light, and therefore they are called 'light quanta' or 'photons'. Light quanta radiated by a hot body vary in size not only owing to their temperature but also because of their intrinsic nature. For instance, when a ray of light is broken up by a prism the light waves thus broken up vary in their frequencies. Each light wave is composed of discrete units which are called light-quanta or photons. Photons are indivisible units. They cannot be broken up into parts. A piece of matter emits energy quanta in finite quantities proportional to the latter's frequencies. This principle of proportionality is the universal constant which is symbolically represented by the letter h . Planck's constant is an unchanging or invariable quantity, its value being 655 preceded by 26 decimal places erg. sec¹. He observed that each light quantum had a definite quantity having a wave property. Light quanta are made up of waves of different sizes. The wave particles are emitted from matter in spurts or jerky movements. There is, therefore, discontinuity in the physical reality for the energy quanta are independent of one another.

Planck thought that the quantum theory did not outmode the classical theory but rather it strengthened the latter². According to the classical physics each material particle has a definite

¹ *The Universe in the Light of Modern Physics*, London, George Allen and Unwin, 1937, p. 23.

² *Op. Cit.*, p. 21.

position and a definite velocity, at any given time; and its future position and velocity can be calculated with perfect precision, if the nature of and the surrounding conditions of that particle are known beforehand. But according to the quantum theory the exact position and the velocity of a particle cannot be known with exactness at any given time; and, consequently, precise prediction regarding the future position and velocity of a particle cannot be made. The quantum theory can only make calculations regarding groups of particles and their future states, and these calculations can only be of a probable nature. James Jeans pointed out that according to the quantum theory the state *A* might be followed by the state *B* or *C* or *D* or any other states in which the state *B* was more likely to occur than the state *C*, and the state *C* more likely to occur than the *D* and so on.³ Nevertheless, the probability calculations of the quantum theory are as definite as those of classical theory. Max Planck pinned his faith on the deterministic aspect of the classical physics. In his opinion the principle of determination holds good in the world-picture of quantum mechanics as in that of classical physics. According to him, the difference between the classical and the quantum physics consists in the fact that different symbols and mathematical procedures are applied in the two systems of physics.⁴ The main difference of the quantum theory from the classical theory consists in the change of notions regarding the basic concepts of material particles. The quantum theory is more precise regarding the formulation of the nature and properties of material particles. According to Planck, the universal constants, such as mass or charge of an electron or a proton, or Planck's quantum, are absolute magnitudes.⁵ The universal constants are the fixed and unchangeable components of atomic systems. Planck himself was a great supporter of the deterministic theory of causality which was also the basic concept of the classical theory.

Niels Bohr applied Planck's quantum theory to the study of atomic systems and the behaviour of electrons in them. He

3 *The Mysterious Universe*, Cambridge University Press, 1933, p. 18.

4 *Scientific Autobiography and Other Papers*, London, Williams and Norgate Ltd., 1950, p. 136.

5 *Philosophy of Physics*, p. 110.

accepted the planetary model of an atom which was first suggested by Jean Perrin and at a later date confirmed by the experiments of Rutherford. According to the planetary model an atomic system is analogous to a solar system in which the negatively charged electrons revolve round the positive nucleus. Bohr introduced the basic ideas of quantum theory into the planetary model of an atomic system suggested by Perrin and Rutherford. In the classical theory the electron of an atom continually emits a whole series of frequencies. According to the quantum theory, on the other hand, an electron does not radiate when it rotates in a fixed orbit, but it radiates only when it jumps from one orbit to another. Bohr formulated the hypothesis that an electron rotated round the nucleus of an atom in certain fixed orbits. The electron may pass from one orbit to another by sudden and instantaneous jumps. It does not radiate energy when it revolves in one of its fixed orbits, but it radiates energy only when it jumps from a higher orbit to a lower orbit. It cannot adopt a path intermediate between two fixed orbits, and cannot get nearer to the nucleus than the first orbit. It simply jumps from one orbit to another like a bullet shot. It radiates a unit of energy or photon in the act of jumping from the outer orbit to the inner. But if an atom receives a quantum of energy an electron jumps from the inner orbit to the outer. According to Bohr, the 'kangaroo jumps' of energy quanta are capricious and they do not seem to observe any definite law. In his view it is impossible to give a causal space-time description of the phenomena of light.⁶ According to him, the propagation of light takes place according to the statistical laws. Einstein also testified to this fact through his experimental verification. It is impossible to predict with precision which out of a number of quanta in a body are likely to jump at a given time. The phenomenon of 'photo-electric effect' gives evidence to the phenomenon of quantum jumps. In Bohr's view the quantum theory establishes the fact that the subatomic phenomena have objective existence; and that they exist independently of our observation.⁷

Bohr found that an electron had two aspects, *viz.*, the

6 *Atomic Theory and the Description of Nature*, pp. 55-6.
7 *Op. Cit.*, p. 115.

corpuscular and the undulatory. There is no conflict between the two aspects of an electron because when the wave aspect of an electron is well-defined it does not present a corpuscular picture, and when it is localized and attains a corpuscular model its wave aspect disappears. Obviously, there is no possibility of conflict between the corpuscular and the undulatory aspects of an electron. The two aspects of an electron do not present themselves to our knowledge at the same time, but rather they have to be visualized in turns. Even though the two aspects of an electron are contradictory in nature they actually complete each other; and therefore this theory is known as Bohr's theory of complementarity.

Bohr's planetary model of an atom was later found to be unsatisfactory because it presented certain difficulties. J. D. Bernal remarked that Bohr's theory of electron and its motion in certain fixed orbits was not as simple as it was originally thought.⁸ Louis De Broglie also pointed out that Bohr's theory could not precisely state the nature of radiation emitted during quantum transitions.⁹ It is now recognized by the contemporary physicists that a pictorial model of an atom is inadequate.

Heisenberg made an important contribution to the modern quantum theory. In his view matter has a dual character which sometimes has the properties of waves and at other times those of particles. It has been experimentally verified that light sometimes behaves like a particle and sometimes like a wave. There is a general correspondence between particles and waves in the phenomenon of light. According to Heisenberg, radiation and matter are identical, and the apparent duality results from the limitations of our language.¹⁰

Heisenberg formulated the 'principle of indeterminacy.' He pointed out that both the position and the velocity of an electron could not be accurately determined at a given time. If the position of an electron is very accurately determined, its velocity can be known with very little certainty. According to Heisenberg, an

8 *Science in History*, London, Watts & Co., 1954, p. 529.

9 *The Revolution in Physics*, London, Routledge & Kegan Paul, 1954, p. 142.

10 *The Physical Principles of Quantum Theory*, Chicago, The University of Chicago Press, 1930, p. 10.

atom or an electron does not display 'in itself' even the simplest geometrical and mechanical properties, but it is made to display these properties through external interference so that the latter can be made accessible to observation.¹¹ In his view the observed properties of an atom are complementary in the sense that the knowledge of one particular property excludes the possibility of the simultaneous knowledge of another property. Heisenberg's principle of indeterminacy implies that every experiment destroys some aspect of knowledge of a system which was obtained by previous experiments.¹² Obviously, simultaneously knowledge of both the position and velocity of an electron is impossible. Max Planck pointed out that when one out of two conjugate magnitudes was ascertained with absolute accuracy, the other one remained absolutely indefinite.¹³ Heisenberg maintained that an atom could not be 'objectively' described as an object in space and changing in time and in certain specific ways as it used to be held according to the Newtonian physics. From the point of view of the modern quantum theory an atom does not present a complete and comprehensible picture. Consequently, it seems to be doubtful whether Bohr's assumption of the electronic orbits have any real existence for the position and the velocity of an electron cannot be accurately specified at any given time. The wave property of an electron excludes the possibility of the simultaneous determination of the exact position and velocity of the latter at any given time.

It must be noted, however, that certain physicists and philosophers gave a wrong interpretation of the principle of indeterminacy. Certain philosophers and physicists believed that atomic systems had something like free-will.¹⁴ G. T. W. Patrick, for instance, thought that Heisenberg's principle of indeterminacy had bearing on the problem of freedom of the will.¹⁵ J. W. N. Sullivan also gave a similar interpretation of the principle of

11 *Philosophic Problems of Nuclear Physics*, London, Faber and Faber, McMLII, p. 86.

12 *The Physical Principles of Quantum Theory*, p. 20.

13 *Scientific Autobiography and Other Papers*, p. 133.

14 Davidson, *The Free-Will Controversy*, London, Watts & Co., 1942, p. 84.

15 *Introduction to Philosophy*, New York, Houghton Mifflin Co., 1935, p. 26.

indeterminacy. In his view atoms and electrons seem to have an element of free-will. He suggested that the theory of Determinism had broken down and the Principle of Indeterminism had taken its place.¹⁶ Eddington remarked that a psychological interpretation of the principle of indeterminacy was unwarranted.¹⁷ He pointed out that half the symbols of the principle of indeterminacy represented the knowable qualities and the other half represented the unknowable qualities.¹⁸ He observed that the unknown qualities corresponded to the retrospective characters. F. S. C. Northrop seems to have misunderstood Heisenberg's principle of indeterminacy. He believed that Heisenberg's principle of indeterminacy implied that the more accurately one tried to observe, the more inexact were the results of one's observation. He, therefore, opined that Heisenberg's principle of indeterminacy suggested that there was contingency at the basis of things.¹⁹ Strictly speaking Heisenberg's principle of indeterminacy does not state that accurate observation of subatomic phenomena is impossible, but rather it implies that accurate knowledge of both the position and velocity of an electron at any given time is impossible in principle. If the position of an electron is ascertained accurately, its velocity is known inaccurately and *vice versa*. It is, therefore, possible to know with precision either of the two aspects of an electron at any given time. Northrop tried to read a casual meaning into Heisenberg's principle. He suggested that Heisenberg's principle could not be taken too seriously since it left science open to a doctrine of indeterminism.²⁰ This remark of Northrop seems to be an unfair criticism of Heisenberg's principle for as an epistemological method the principle of indeterminacy seems to be infallible. Bertrand Russell also believed that the Principle of Indeterminacy had to do with measurement of causation.²¹ The principle of indeterminacy merely refers to the epistemological limit of measurement.

16 *Limitations of Science*, Penguin Books, p. 193.

17 *New Pathways of Science*, Cambridge University Press, 1935, p. 86.

18 *Op. Cit.*, p. 98.

19 *Science and First Principles*, Cambridge University Press, 1931, p. 135.

20 *Op. Cit.*, p. 135.

21 *The Scientific Outlook*, London, George Allen & Unwin, 1931, p. 105.

Louis de Broglie gave a precise formulation of wave mechanics. He found that not only electrons and protons, but all particles of matter were invariably associated with waves. Broglie meant by a particle or corpuscle any manifestation of energy localized in an extremely minute volume which was capable of moving with a finite velocity.²² Matter is a train of wave particles. A material particle has both the properties of a wave and a particle at the same time.²³ Both matter and light have the simultaneous properties of particles and waves. It is obvious, then, that there is no difference between the fundamental properties of light and matter. In fact, light is a form of matter,—a refined form of matter.²⁴ Recent experiments on subatomic phenomena have given clear indications to the fact that there is a two-way passage between matter and light. Material particles are capable of being transformed into radiation, and radiation is also capable of being condensed into new particles of matter.²⁵

De Broglie pointed out that there was discontinuity in the physical reality. If matter were purely continuous it would rule out the existence of all individual entities.²⁶ But it is known through experimental analysis that matter is composed of innumerable particles. Physical reality, therefore, cannot be interpreted purely in terms of continuity. There is discontinuity within continuity in which the distinct particles reach out for one another. However, sometimes it seems difficult to locate particles and define them dynamically with perfect exactness at any given time.

De Broglie pointed out that the laws of Nature in classical physics no longer had a strict causal character.²⁷ The sub-atomic phenomena obey only the laws of probability. It is objected by certain physicists that a non-deterministic science is inconceivable. Einstein, for instance, directed certain disturbing objections against the probabilistic interpretation of physical reality. De Broglie

²² *Matter and Light*, New York, W. W. Norton & Co., 1939, p. 60.

²³ *Op. Cit.*, p. 31.

²⁴ *Physics and Microphysics*, London, Hutchison's Scientific and Technical Publications, 1955, p. 68.

²⁵ *Op. Cit.*, p. 69.

²⁶ *Light and Matter*, p. 222.

²⁷ *Op. Cit.*, p. 36.

pointed out that an indeterministic interpretation of physical reality was definitely possible for it was warranted by the conclusions of the quantum physics.²⁸ However, he also suggested that it was possible that physics might return in future to a deterministic interpretation of physical reality.

Schrodinger extended de Broglie's conception of matter. He observed that material particles were nothing but wave-systems. According to him, the electrons have the characteristics of both particles and waves. The wave-picture and the particles-picture are the two aspects of physical reality; these two images taken together give the real idea of material motion. An electron does not exist as a corpuscular object, but rather it exists as an electric charge which is distributed in the form of electrical field around an atom's nucleus. This electrical field of an atomic system is in a state of vibratory motion. An electron, then, is a form of field structure. However, Schrodinger warned that the wave-picture of an electron should not be taken in too literal a sense. A wave-picture of an electron is just a mathematical description of what actually happens in an atomic system.²⁹

Dirac also pointed out like de Broglie and Schrodinger that all material particles had wave properties. According to Dirac, the corpuscular and the undulatory aspects of matter are universal. The association of a corpuscle with a wave is not peculiar to the phenomenon of light alone, but it is true of all forms of matter. All forms of particles are associated with waves and all wave motions are associated with particles.³⁰ Dirac pointed out that the sub-atomic phenomena did not operate according to any definite deterministic laws.³¹ In Dirac's system the particles occupy different positions and have different energies. Dirac suggested that any point of space-time, even if void of all known forms of matter, must have a velocity of some real material entity. This fact led him to suspect that there was perhaps the existence of ether or something akin to it in nature. However,

28 *The Revolution in Physics*, p. 216.

29 *Wave Mechanics*, Glasgow, Blackie and Sons Ltd., 1928, p. 6.

30 Dirac, P. A. M., *The Principles of Quantum Mechanics*, Oxford University Press, 1930, pp. 9-10.

31 *Op. Cit.*, pp. 9-10.

even if the concept of ether is not revived again it is almost certain that any form of existence within the space-time structure must have some form of physical existence with the dual properties particle and wave.

The important conclusions of the modern physics may be briefly summarized as follows:

First, the physical reality is objective and independent of a human observer. Almost all the physicists with a very few exceptions are agreed on this point. Eddington's view, for instance, is an exception to the general rule. He maintained that the physical universe was not objective in a philosophical sense.³² In his view the entities of microscopic physics, such as atoms, electrons and the like, are hypotheses or inferences. The entities of physics are partially subjective because it is the human mind which makes inferences regarding the sub-atomic phenomena. Eddington remarked that there was no physical method by which the objective world could be reached.³³ Obviously, Eddington was dabbling in the metaphysical implication of the term 'objectivity'. There are certain methods in physics with the help of which the nature of some of the physical phenomena can be observed objectively. In such cases certain instruments are used for measuring the behaviour of some of the physical phenomena. P. W. Bridgeman aptly pointed out that operations had a certain degree of repeatability and identifiability and therefore also 'objectivity'.³⁴ Hans Reichenbach observed that quantum mechanics was concerned with relations between physical phenomena; and that the behaviour of some of the physical phenomena could be registered with the help of certain physical devices, such as photo-electric cells, etc. Consequently, it is quite possible to replace the human observer by certain physical devices for registering the behaviour of some of the physical phenomena. Reichenbach, therefore, pointed out that all statements of quantum mechanics could be made without reference to a human observer.³⁵ In sum,

³² *New Pathways of Science*, p. 45.

³³ *Op. Cit.*, pp. 291-2.

³⁴ *The Nature of Some of Our Physical Concepts*, New York, Philosophical Library, 1952, p. 8.

³⁵ *Philosophic Foundations of Quantum Mechanics*, Berkeley, University of California Press, 1946, p. 15.

modern physics has established beyond doubt the objective existence of physical reality.

Secondly, physical reality is differentiated. Atoms are the building blocks of physical reality. They are not indivisible like the atoms of Democritus. They are complex systems composed of many particles. It has been established beyond doubt by recent experiments that they are divisible. J. J. Thompson represented an atom as a homogeneous entity of positive electricity. Thompson's model of an atom was replaced by the Rutherford-Bohr model. However, recent experiments have shown that Bohr's planetary model is unsatisfactory. In fact, an adequate pictorial model of an atom cannot be made. Nevertheless, it may be said with some definiteness that an atom has two main constituents, *viz.*, proton and electron. A proton has positive charge and an electron has negative charge. Recently two more constituents of an atom have been found, *viz.*, positron and neutron. Positron is a sort of positive electron carrying a positive charge. Its mass is equivalent to the mass of an electron. Chadwick found out the existence of neutron. The mass of neutron is almost the same as that of proton. But it has no charge. It is believed now-a-days that proton and neutron are the two states of the same elementary particle.³⁶ Yukawa discovered an entirely new type of material particle called mesotron or meson. The term mesotron is derived from the Greek word *meso* which means intermediate. It is called mesotron because its mass is intermediate between the mass of protons and neutrons, on the one hand, and that of electrons, on the other. The neutrons undergo spontaneous decay. The spontaneous disintegration of mesons gives rise to other particles. The disintegration of a meson results in the simultaneous production of an electron and two neutrons.³⁷ It has been recently found that there are different types of mesons. However, the properties of mesons are not yet fully known. Electrons revolve round the nucleus of an atom and they have a negative charge. Each electron creates an electromagnetic field

36 De Broglie, L., *The Revolution in Physics*, p. 69.

37 Anderson, C. D., 'The Elementary Particles of Physics', *Science in Progress*, Ed. Baitsell, New Haven, Yale University Press, Seventh Series, p. 242.

around itself. Electrons emit photons in the act of jumping from one orbit to another. A photon is not a material particle in the sense that it cannot be identified with any particle at rest.³⁸

Modern physicists recognize at least fourteen distinct elementary particles.³⁹ However, it cannot be said with certainty whether this is complete and whether all these particles can be called fundamental. In recent times more and more fundamental particles are being discovered. In fact, the theory of fundamental particles is in a fluid state and sometimes it is doubted whether they can be called 'fundamental' at all. It seems quite possible that the so-called fundamental particles can be explained in terms of electro-magnetic field or energy quanta. As a matter of fact, any particle of matter may be described as a unit of energy or quantum. Perhaps the so-called fundamental particles can be explained in terms of most simple particles of matter, *viz.*, energy quanta. In fact, any point in the electromagnetic field refers to a unit of material energy. However, this particular view is still in a hypothetical stage.

Thirdly, material particles have simultaneously two aspects, *viz.*, the corpuscular and the undulatory aspects. A visual picture of the two aspects of a material particle cannot be made. The undulatory nature of a particle has no resemblance to any observed physical phenomena, such as, the waves of an ocean. It is phenomenon which is experienced while observing the behaviour of a material particle. There is defraction or displacement of a particle in an electromagnetic field. This displacement constitutes the undulatory aspect of a particle. The expression 'wave' as an aspect of a material particle has a modified meaning. In actuality, the expression 'wave' refers to the displacement aspect of a sub-atomic phenomenon which is invariably associated with a material particle. De Broglie pointed out that the corpuscular and the undulatory aspects were not only present in electrons, but in all other material particles.⁴⁰

Fourthly, the physical phenomena are governed by the laws

38 *Op. Cit.*, p. 245.

39 *Op. Cit.*, p. 246.

40 *Light and Matter*, p. 97.

of probability. It was found by some of the modern physicists that there is randomness and spontaneity of the motion of material particles. Boltzman observed that there was random distribution of parts in a volume of gas. Einstein deduced from the laws of photo-electric effect that light was of a discontinuous structure. According to modern quantum physics the laws governing the behaviour of the sub-atomic phenomena are of a statistical nature. The laws of quantum physics do not refer to the behaviour of individual particles, but to the aggregates of particles. In the Newtonian physics, on the other hand, if the state of a particle at any given time is known, all its past and future states can be calculated with the help of the laws of motion. On the contrary, according to quantum physics, it is impossible in principle to know with precision the exact position and velocity of a particle at a given time. Consequently, the position of an electron cannot be predicted with perfect precision; all that can be predicted is only the probability of finding an electron at some point.⁴¹ However, there is a general increase in certainty when prediction is made with reference to a large number of particles. It may be noted here that there is a radical departure from the strict determinism of classical physics. Determinism of classical physics has disappeared from quantum physics and the law of probability has taken its place. Hans Reichenbach maintained that Heisenberg's principle of indeterminacy not only implied that it was impossible to have precise knowledge of the sub-atomic phenomena, but it also hinted at an important truth. He believed that the principle of indeterminacy did not refer to the limitation in the power of human observation, but rather it gave positive knowledge and deep insight into the nature of the sub-atomic phenomena.⁴² He thought that spontaneity of motion was the inherent nature of material particles. Consequently, the behaviour of material particles baffles precise predication. Reichenbach pointed out that the quantum occurrences behaved unreasonably and they violated some of the requirements of cause and effect which any serious

41 Heitler, W., 'The Departure from Classical Thought', *Albert Einstein: Philosopher-Scientist*, New York, Library of Living Philosophers, 1949, pp. 189-90.

42 *Philosophic Foundations of Quantum Mechanics*, p. 44.

physicist would like to maintain even when the relation between cause and effect was only of a statistical nature.⁴³ The theory of probability has replaced the strict determinism of classical physics since Max Born gave a statistical interpretation of Schrödinger's wave function. Alfred Landé reaffirmed the fact that determinism fails to account for the occurrences of various physical phenomena. He pointed out that determinism could not be restored to its original dignified position, and that it was futile to search for hidden causes behind any distribution of particles which satisfied the laws of probability.⁴⁴ Any theory of physical reality which is based on the idea of pre-established harmony is inadequate. The random distribution of particles is an essential aspect of physical reality.⁴⁵ De Broglie pointed out that belief in rigid determinism in the realm of physics was considered in modern times to be a scientific dogma, and that the disappearance of determinism from quantum physics was balanced by the law of probability.⁴⁶ However, he proposed a suggestion in 1952 that it was possible that determinism of some form in quantum physics might be revived in future.⁴⁷ Einstein also tried to transcend the operational method in physics and suggested that there might be certain hidden deterministic laws to account for the behaviour of the sub-atomic phenomena which apparently obeyed the laws of probability. He believed that an indeterministic explanation of physical reality would destroy the perfection and unity of nature. However, Einstein did not offer any proofs for this hypothesis, but he only suggested that it was his hope that in future some hidden deterministic law might be discovered underneath the apparent random behaviour of sub-atomic phenomena. Max Planck also subscribed to the same view and pointed out that there was some strict causal law governing the behaviour of material particles.⁴⁸ Heisenberg, Schrödinger, Dirac and Max Born opposed a deterministic explanation of the behaviour of physical

43 *Philosophy and Physics*, Cambridge University Press, 1942, p. 8.

44 'Probability in Classical and Quantum Theory', *Scientific Papers Presented to Max Born*, London, Oliver and Boyd, 1963, p. 59.

45 *Op. Cit.*, p. 60.

46 *The Revolution in Physics*, pp. 212-13.

47 *Op. Cit.*, p. 216.

48 *The Universe in the Light of Modern Physics*, p. 89.

phenomena and maintained that the probability description of material particles was ultimate. Their views conformed to the operational ideal. They asserted that only those aspects of the universe could be called real which could be objectively measured and verified. They found that material particles observed only the laws of probability; and that consequently, the random behaviour of particles must be regarded as an objective fact. They relied upon the operational method and did not take the risk of making any speculative jumps. J. von Neumann pointed out that the probability laws of quantum mechanics were incompatible with hidden determinism. It seems to be most improbable that determinism in atomic physics would be re-established in future. Max Born admitted that there were many shortcomings in quantum mechanics, but he believed that those difficulties could not be solved by the concepts of classical physics. He asserted with great conviction that the indeterministic foundation of quantum mechanics would be permanent and the concept of 'chance' would become the primary notion of physics.⁴⁹ A correspondence took place between Max Born and Einstein in which the latter rejected the idea of a dice-playing god of quantum physics and hoped that somebody in future might find deterministic laws governing the behaviour of physical phenomena. Max Born remarked with reference to Einstein's observation that the concept of 'chance' had to be incorporated in quantum mechanics and we had to 'play the game of dice' when we dealt with atomic phenomena. He pointed out that predictions of statistical calculations were more than an exercise of the brain; and that, in fact, the behaviour of material particles was basically indeterministic in character.⁵⁰

It may be noted in this connection that the strict laws of determinism have not only broken down in the region of sub-atomic phenomena, but they have been considerably relaxed in the region of large-scale phenomena. The law of entropy is a clear indication to this fact. Entropy may be described as a measure of disorganization of a system. The universe is

49 *Natural Philosophy of Cause and Chance*, Oxford, Clarendon Press, 1951, p. 121.

50 *Op. Cit.*, p. 123-4.

increasingly moving towards a state of disorganization. The Second Law of Thermodynamics states that the spontaneous processes of the physical phenomena are to some extent irreversible; and that they are accompanied by degradation of energy.⁵¹ This principle states that disorganization is an intrinsic property of matter. However, the laws of determinism still hold good so far as the large-scale physical phenomena are concerned. Nevertheless, it does not mean that the laws of probability are not applicable to the large-scale phenomena. The large-scale phenomena do observe the laws of probability, but being very great in magnitude they cannot be detected by ordinary human observation. The basic principles which govern the sub-atomic phenomena also govern the large-scale phenomena. The probability description of physical reality, therefore, seems to be adequate.

Fifthly, in the modern times some of the physicists have been, trying to present a coherent world-view on the basis of a single fundamental principle. The most noteworthy attempt was made by Einstein who tried to explain the entire physical reality on the basis of the unified field theory. Einstein's theory can be properly understood in the light of its historical back-ground. In the first half of the nineteenth century Michael Faraday for the first time turned the electromagnetic theory into the lines of field theory. The traditional theory of 'action at a distance' was gradually abandoned and the concept of 'field' took its place. Faraday observed that the so-called empty space was the region of greatest material activity. He called this region the 'field'. Maxwell gave real mathematical formulation of the concept of field. He pointed out that electromagnetic fields were both electric and magnetic fields. Both Faraday and Maxwell pictured all space surrounding electric charges as filled with electric and magnetic fields. Maxwell also pointed out that energy could not exist without association with matter.⁵² The term 'energy' was used for the first time by Lord Kelvin in 1854 in its modern sense. James Jeans described matter as bottled-up waves and energy as unbottled waves.⁵³

51 Hougden, O. H. and Watson, K. M., *Chemical Process Principles*, Part Two, New York. John Wiley and Sons, 1949, p. 439.

52 *Matter and Motion*, New York, Dover Publications, p. 89.

53 *The Mysterious Universe*, Cambridge University Press, 1933, p. 69.

Einstein recognized no essential difference between mass and energy. Mass is a kind of energy and energy always refers to mass. Einstein and Infeld pointed out that physical reality had two aspects, *viz.*, matter and field. Matter represents mass and field represents energy.⁵⁴ Thus there is no fundamental difference between matter and field. There is greater concentration of energy in matter; and there is smaller quantity of energy in the field. It is obvious, then, that there is only quantitative difference between matter and field, but there is no essential digerence can be drawn between matter and field. Matter and field are basically identical; they are the two aspects of the same reality. Einstein and Infeld believed in the hypothesis of the interaction of the discrete material particles and continuous field. Herman Weyl maintained that there was no empty space; but that rather space was filled with some form of matter. He believed in the duality of matter and field. He pointed out that the relation between matter and field was a dynamic one in which matter excited field and field acted upon matter.⁵⁵ In recent times the idea of field quantization has come into the picture. Quantum theory brought out the quantum character of radiation. Therefore, according to quantum theory the field is quantized. According to this theory there are fundamental interactions between charged particles and electromagnetic fields.⁵⁶ According to quantum field theory radiation and absorption of electromagnetic waves are regarded as the creation and annihilation of photons respectively.⁵⁷ In the present quantum field theory every electron forms its cloud of electromagnetic field. These electromagnetic clouds are formed immediately around their source particles, and these fields or proper fields interact with their source particles.⁵⁸ Both the source particle and the cloud are observed as particles. P. Kush pointed out

54 *The Evolution of Physics*, Cambridge University Press, 1947, p. 256.

55 *Philosophy of Mathematics and Natural Science*, Princeton University Press, 1949, p. 173.

56 Gunn, J. C., 'The Theory of Radiation', *Physical Society Reports on the Progress of Physics*, 1955, Vol. XVIII, pp. 128-9.

57. Umezawa, H., *The Quantum Field Theory*, Amsterdam, North-Holland Publishing Company, 1956, p. 12.

58 *Op. Cit.*, p. 17.

that the quantization of the field was due to the fluctuating field strengths in space.⁵⁹ An electron continuously emits and absorbs quanta of energy in the presence of the quantized electromagnetic field. The emitted quanta of energy may produce quanta of radiation before reabsorption, and the reversal of energy to electron involves many complicated steps. There is no doubt, therefore, that there is a very close relation between matter and field, and it seems quite likely that they are the two aspects of some fundamental reality. In fact, in the recent past Einstein tried to present a unified field theory to explain the whole of physical reality. He believed that the physical reality was a continuous manifold. The unified field theory is based on the general theory of relativity which tries to incorporate both the laws of electromagnetic and gravitational fields.⁶⁰ Einstein, therefore, tried to give a simplified theory of the physical reality.

Georges Lemaitre suggested the hypothesis that the entire matter of the whole universe must have been present in a primeval atom which probably later on evolved into the universe. The physical reality proceeded from a condensed to a diffused state of matter. The increase of entropy is characterized by the progressive fragmentation of energy which originally existed in the form of a single unit. Lemaitre believed that the atom world was broken into the fragments, and each fragment into still smaller pieces.⁶¹ He compared the evolution of the world to a display of fireworks which has just ended. He suggested the hypothesis that space began at zero, and then it started expanding as a result of the radio-active disintegration of the primeval atom. He pointed out that from the point of view of quantum theory the principles of thermodynamics may be stated as follows: (1) energy of the total amount is distributed in distinct quanta, and (2) the number of the distinct quanta is ever increasing. He carried this hypothesis further and suggested that if we went back in the course of nature we would find lesser and lesser

59 Kush, P., 'The Magnetic Moment of Electron', *The Present State of Physics*, American Association for the Advancement of Science, 1954, p. 10.

60 Margenau, H., 'Einstein's Conception of Reality', *Albert Einstein: Philosopher-Scientist*, p. 258.

61 *The Primeval Atom*, pp. 77-8.

quanta, until we would find all the energy of the universe packed in a few or even in a unique quantum.⁶² In Lemaitre's view, then, the cosmic evolution is the result of super-radioactive process. Eddington also followed the same line of thought as that of Lemaitre. He suggested the hypothesis of the expanding universe. He maintained that entropy was the time's arrow in the physical world. He said that there was no bending round of time to bring one back to the original moment from which one set out.⁶³ However, when the entropy reaches its maximum limit a state of thermodynamical equilibrium is attained, and it cannot increase beyond that stage. These views seem to be interesting hypotheses regarding the nature of the physical universe. But they are in many ways unsatisfactory and do not present a consistent scheme of the world. However, it must be acknowledged that there is a persistent effort on the part of some of the physicists to present a consistent world-view.

Rapid development in the domain of physics led some of the physicists to philosophize. Sometime philosophical conclusions naturally came out of the discussion of some of the fundamental problems in physics. Curiously enough the philosophical speculations of some of the physicists have a strong idealistic bias. The philosophical views of some of the physicists may be briefly mentioned here.

Sir James Jeans advocated a sort of mathematical idealism. He maintained that experience was the only reliable source of knowledge. He looked upon *a priori* knowledge with great doubt and criticised Kant on that ground. He remarked that if *a priori* knowledge were true it would give us knowledge about our own minds, and almost nothing about the external world. He pointed out that *a priori* knowledge would not give us any reliable knowledge of the structure of the universe, but only of the structures of our own minds.⁶⁴ Then Sir James proceeded to tackle the ontological problems. He maintained that the universe was rational. The universe was not a mere totality of capricious events. There are coherent patterns of events in the universe

62 *Nature*. May 9, 1931.

63 *New Pathways of Science*, p. 51.

64 *Philosophy and Physics*, pp. 54-5.

which can be explained in mathematical terms. Jeans believed that there was a universal being who fabricated all the mathematical patterns in the universe. He argued that since there were patterns in the universe, there was also some sort of loom and cosmic weaver by implication.⁶⁵ Jeans opined that the mathematical patterns of the universe were in the form of thoughts in the mind of God. He believed that God was the supreme mathematician, for the mathematically patterned universe appeared to be designed by a pure mathematician.⁶⁶ He thought that the world was nothing but an idea in the mind of God. Physical phenomena ultimately subsist in the mind of God. Hence, physical phenomena in their ultimate analysis are of the nature of pure thought; and hence, they are unrealizable as mere material facts. Jeans pointed out that the universe which was basically psychical in nature could not admit of material representations;⁶⁷ and that space, time, matter, etc. were of the nature of thought.

Jeans' view is a reaction against a mechanistic theory of the universe. He opined that the concept of mind was not altogether divorced from the concept of matter. He considered all material phenomena to be of the nature of thought. His belief seems to be dogmatic. It is true that the physical phenomena can be represented in mathematical language; but it does not necessarily mean that the former are of the nature of thought just as the mathematical equations are the symbolic expressions of certain thoughts. Jeans' belief that God created the mathematical designs in the physical reality seems to be dogmatic. If God is at all a mathematician, what is the end of his mathematical creations? Bertrand Russell sarcastically remarked that if God were a pure mathematician as his knightly champion supposed, He would not wish to give gross external expressions to His thought, for the desire to trace mathematical patterns belonged only to a schoolboy stage.⁶⁸ Bertrand Russell pointed out also that the quantitative measurements of physical phenomena were the consequences of certain operations; and

⁶⁵ *Op. Cit.*, p. 175.

⁶⁶ *The Mysterious Universe*, p. 132.

⁶⁷ *Op. Cit.*, p. 123.

⁶⁸ *The Scientific Outlook*, p. 117.

that they told us only about the mode of behaviour of physical particles; and that consequently, only the mathematical properties of physical phenomena could be discovered by the operational method.⁶⁹ Besides this, everything in this universe cannot be explained in terms of mathematics. C. E. M. Joad remarked that the ethical and aesthetic values could not be regarded as mathematical concepts.⁷⁰ Therefore, Jeans' interpretation of the physical reality seems to be inadequate.

Eddington also gave an idealistic interpretation of physical reality. He maintained that physical reality was not different from the observer's own mind, but that rather both were basically of the same nature. He pointed out that mind was the first and the most direct thing in our experience and all else was remote.⁷¹ He maintained that one's experience of this universe was in a sense subjective; that physical world was the construction of the knowing subject. Eddington advocated a sort of Kantian *a priori*ism. I. R. Schneider remarked that there was some difference between the *a priori*ism of Kant and that of Eddington. He pointed out that Kant did not stop at subjectivism as Eddington did, but he tried to find a link between human experience and the external world.⁷² Eddington believed that physics in its ultimate analysis could tell us nothing about the physical world. The only knowledge that we can possibly have of physical universe is the impression that it makes upon our mind. The nature of physical reality cannot be adequately described in terms of pointer readings. There are certain features physical reality which elude detection by metrical methods. Eddington believed that the nature of reality was spiritual. Science cannot give an adequate picture of this spiritual world. The symbols of science are inadequate to express the nature of reality. Eddington maintained that the objective world was spiritual in its nature. He even discarded the theory of dualism of matter and

69 *Philosophy*, 1927, p. 157.

70 *Philosophical Aspects of Modern Science*, London, George Allen & Unwin, 1943, p. 70.

71 *Science and the Unseen World*, New York, Macmillan Company, 1930, p. 24.

72 *Presuppositions and Anticipations in Einstein's Physics*, *Albert Einstein: Philosopher Scientist*, pp. 134-5.

spirit, and upheld the position of an idealist.⁷³ Matter is not matter, but, in fact, it is spirit. The entire world is spiritual.⁷⁴ The real world is of the nature of consciousness. Eddington maintained that the universe was of the nature of universal Mind or Logos.⁷⁵ The nature of the spiritual reality can be apprehended through mystic experience.

Eddington's idealistic interpretation of reality is open to criticisms. Physical universe has objective existence, and is independent of the observer's mind. Experimental evidence of physics sufficiently prove this fact. Physical world, therefore, cannot be regarded as a pure construction of the observer's mind. Further, Eddington's ontological interpretation of the world is open to certain criticisms. He believed that pure spirit or universal consciousness was the ultimate substance or the essence of reality. Eddington's idea of pure spirit or universal consciousness seems to be a dogma for he did not advance any cogent argument in favour of his thesis. His conception of the 'mind-stuff' is very difficult to conceive for the latter is not even spatio-temporal in its nature.⁷⁶ If reality is neither material nor spatio-temporal it cannot express itself in a way which can be humanly conceived. J. W. N. Sullivan remarked that Eddington left his notion of the 'mind-stuff' rather vague and indefinite. He pointed out that Eddington's conception of the 'mind-stuff' could not be properly described as 'stuff' since it was not expressed in space and time; and that it was not mind in the ordinary sense of the term since it was only here and there that it developed to the level of consciousness.⁷⁷ A. C. Benjamin also pointed out that that Eddington's conception of the 'mind-stuff' was somewhat vague for it could not be identified with individual consciousness. Eddington believed that reality was spiritual in its nature for he found that the scientific symbols were inadequate to express its nature. He believed that the spiritual nature of

73 *The Philosophy of Physical Science*, Cambridge University Press, 1939, p. 69.

74 *The New Pathways of Science*, p. 319.

75 *The Nature of the Physical World*, New York, The Macmillan Co., 1928, p. 338.

76 *Op. Cit.*, p. 277.

77 *Limitations of Science*, p. 192.

reality could be apprehended through mystic experience. It is obvious, then, that Eddington's theory of reality has only speculative value, but no scientific value, for it is not based upon the operational method. Benjamin remarked that the philosophical position of James Jeans was less speculative in character than that of Eddington,⁷⁸ for it followed directly from the facts of science. Jeans thought that there was some correlation between the mathematical pattern of the physical world, on the one hand, and the background of reality, on the other. Eddington's view of spiritual reality seems to be far removed from Nature, and unwarranted by any scientific evidence. Eddington's idealistic interpretation of reality, therefore, seems to be dogmatic.

While Eddington occasionally abandoned the methodology of science and made excursions into the region of speculation, P. W. Bridgman adhered to the empirical method and scrupulously retained his scientific attitude. Bridgman maintained that pure empiricism was the only genuine epistemological method in physics. He pointed out that experience was determined only by experience.⁷⁹ He denied the existence of *a priori* principles in human knowledge. He maintained that knowledge was the result of certain operations. For instance, certain physical operations have to be performed in order to find the length of an object. However, before any physical operations are performed for ascertaining the length of an object, it is necessary to fix standard of length. The length, weight, size etc. of an object can be measured through certain operations in accordance with certain definite standards. A concept is, therefore, the result of certain operations. Bridgman maintained that concepts were synonymous with the corresponding sets of operations.⁸⁰ However, the meaning of a concept cannot be known unless one specifies the set of operations that one uses in applying the concept in a concrete situation.

Bridgman pointed out that operations had a certain degree of repeatability and identifiability. The same set of operations

78 *An Introduction to the Philosophy of Science*, New York, The Macmillan Co., 1937, p. 450.

79 *The Logic of Modern Physics*, New York, The Macmillan Co., 1951, p. 3.

80 *Op. Cit.*, p. 5.

yield the same set of results. The set of operations that are equivalent to a concept is unique. It is on account of this uniqueness that one concept is different from other concepts. Bridgman, therefore, pointed out that operations had objectivity.⁸¹ The concepts which are obtained through sets of operations are the aspects of physical reality. Bridgman pointed out that the proper definition of a concept must be made in terms of actual operations. An operation reveals that there is a real correspondence between concepts and the facts of experience. It follows, therefore, that those concepts which cannot be operationally defined are meaningless. For instance, a prototype of Newton's absolute time cannot be found in Nature, and hence, it is a meaningless concept.⁸² It is obvious, then, that no valid and definite statements can be made about the regions which have not been experimentally investigated.

Bridgman maintained that human knowledge was relative. Knowledge is relative to the operations that are selected.⁸³ Motion, rest, size etc. are relative terms. They are relative to certain other bodies selected as standards. Consequently, no statements can be made about absolute rest, motion, size etc. from the operational point of view. There is another important consequence of this doctrine. It may be possible to find operations for those questions which have meanings; and those questions which cannot be operationally solved are meaningless. The relative nature of operational definitions indicates that all our measurements are approximate. The results of measurements are approximate not only in the case of physical phenomena, but also in the case of all forms of experience. We do not have absolutely precise and perfect knowledge of anything. There is always a penumbra of uncertainty surrounding our knowledge; and science endeavours to penetrate into that region of uncertainty by improving its techniques for accuracy of measurements. The depth and extent of the region of uncertainty is being attenuated with the advancement of knowledge.

81 *The Nature of Some of Our Physical Concepts*, New York, Philosophical Library, 1952, p. 8.

82 *The Logic of Modern Physics*, p. 6.

83 *Op. Cit.*, p. 25.

Bridgman maintained that operations might be of different kinds. Some of the operations are instrumental which are generally performed in the laboratory. Apart from the instrumental operations there are certain non-instrumental operations which may be called 'mental' operations. 'Paper-and-pencil' operation is one of the forms of mental operations. Sometimes paper-and-pencil operations are performed with the help of symbols. Verbal operation is another form of mental operation. Verbal operations constitute an important aspect of a civilized society. Politics, philosophy, religion and the like generally contain verbal operations. One of the most important forms of paper-and-pencil operation is performed with the help of mathematical symbols. Mathematical operations are human inventions. However, even though mathematics has a human origin, it has a great importance in human knowledge for the results of instrumental measurements can be stated precisely in terms of mathematical symbols. In contrast with the hazy nature of instrumental measurements, mathematical symbols have great neatness and simplicity. Therefore, the theoretical interpretations of the results of instrumental operations can be precisely stated with the help of sharp mathematical symbols. Bridgman pointed out that the instrumental and the paper-and-pencil operations reinforced and supplemented each other. He, therefore, maintained that the paper-and-pencil operation had an instrumental status.⁸⁴

It must be acknowledged that Bridgman's operational viewpoint has a great importance in the field of experimental sciences. Bridgman thought that all physical quantities were the results of physical operations. So far his view cannot be disputed, for it has proved to be useful in the field of sciences. It must be mentioned, however, that the operational viewpoint has certain limitations. There are certain entities in Nature which cannot be consistently defined operationally. L. J. Stadler remarked that a gene cannot be defined as a single molecule for no experimental operations had been performed so far to prove that it was a single molecule; and that yet other facts gave

84 *The Nature of Some of Our Physical Concepts*, p. 61.

sufficient evidence of the fact that a gene was a single molecule.⁸⁵ The operational definition is, therefore, inadequate for it is subject to certain limitations. Henry Margenau also found fault with Bridgman's operational method. He pointed out that Bridgman's original emphasis was on the instrumental operations which were mainly performed through physical measurements. But later on Bridgman also introduced the methods of paper-and-pencil and mental operations as the sub-species of the operational method. Margenau remarked that this attitude of Bridgman was something like a 'retreat' from the original standpoint.⁸⁶ Margenau guilty of *argumentum ad hominem*. For the paper-and-pencil operation is as accurate a method as an instrumental operation. Both mental and instrumental operations follow the same procedure and they get almost similar results. Bridgman is, therefore, justified in giving an instrumental status to certain forms of mental operations. It seems, therefore, that Margenau's criticism of Bridgman's operational viewpoint is unfair. A. C. Benjamin remarked that in Bridgman's view the data must be produced operationally and the concepts must be defined in terms of the data; and hence, Bridgman is essentially a positivist.⁸⁷ He pointed out that Bridgman was concerned with the accumulation of the data, and not with knowing them.⁸⁸ This again seems to be an unjust criticism of Bridgman's operational definition. It is true that Bridgman's emphasis was on the objective measurement of the data. Benjamin seems to have misrepresented Bridgman's view by stating that the latter is exclusively concerned with the accumulation of the data and not with knowing them. Getting the data and defining them operationally are also understanding them in their proper perspective. The operational definition of concepts and the appreciation of their significance go *pari passu*. To produce the data operationally is also to know them. Benjamin's criticism of Bridgman's operational definition, therefore, seems to be unjust. At the most one may say that Bridgman did not try to present a

85 'The Gene', *Science*, 1954, 120, p. 814.

86 *The Nature of Physical Reality*, New York, McGraw-Hill Book Company, 1950, p. 232.

87 *An Introduction to the Philosophy of Science*, 1937, p. 157-8.

88 *Op. Cit.*, p. 150.

philosophical interpretation of his operational viewpoint; he did not present a world-view on the basis of his operational method. Perhaps Bridgman never intended to give a philosophical interpretation of physical reality. If there is any defect in Bridgman's theory, then perhaps a lack of philosophical interpretation of his viewpoint seems to be the only drawback. Nevertheless, it must be acknowledged that all concepts must be operationally defined sooner or later in order to be valid and meaningful. Bridgman's operational method seems to have a wider scope than what his critics ordinarily suppose.

Henry Margenau tried to present a systematic philosophy of modern physics. He claimed that we could have a glimpse into the nature of physical reality through the medium of epistemology of science. In this respect Margenau agreed with Kant in holding that epistemology was prior to ontology. Margenau suggested that one should discard the ontological crutches and walk on the sure grounds of epistemology. However, he recognized that science of whatever variety contained certain elements of speculation which was a distinctive mark of philosophy. Sciences originate from the correlational level and evolve towards a theoretical stage. A theoretical science receives its validity through empirical confirmation. However, no science is purely correlational or purely theoretical, but rather these two aspects of science generally overlap. Nevertheless, all sciences have a persistent tendency to evolve towards a theoretical stage. This indicates that there is a philosophical aspect in every science.

Margenau maintained that the sense data of the immediately given with which one is confronted in experience were formless and hazy. However, it is possible to read coherent meaning in the relatively hazy experience that one gets through the immediate experience of the sense data. But the apprehension of the whole object is more than a mere synthesis and integration of the fragments of experience. The act of reification of data involves construction in accordance with rules, and objectification is the result of such a process of construction. But the rules by which constructions are made are not unique. They may be changed as scientific theories change. The rules are not eternally grounded in experience as Kant thought. Margenau, on the

contrary, maintained that rules evolved in the act of reification, and that they were also alterable. Rules of correspondence are not fixed and unchangeable for all time to come. They link concepts, ideas and the like to Nature. Margenau prefers the term 'construct' to 'concept' because the latter is generally associated with certain metaphysical controversies. Constructs are not found already formed in the immediately given, but rather they are formed by the creative process of our experience. They are in a way our inventions. In this sense, anything may be a construct, such as ether, electron, phantom, etc. However, these constructs must satisfy certain epistemological conditions in order to be admitted as valid. The elements of spontaneous experience are properly ordered by the rational understanding. There is, thus, a rational ordering of experience through a passage from the data to constructs in accordance with the rules of correspondence. Internal neatness, self-consistency and wide applicability are some of the important characteristics of these rules of correspondence. Experience, therefore, flows into the region of constructs through the rules of correspondence. The data are provisionally constructed by the assumed rules of correspondence for further examination. At each stage of scientific progress some new facts come into light and thus they call for further examination of constructs. It is, obvious, then, that no theory or method of investigation can be regarded as ultimate or final. However, the principles regulating the choice of the rules of correspondence in connecting the constructs to Nature change relatively slowly. Margenau called these regulating principles the metaphysical principles.

Margenau suggested that constructs must have logical fertility.⁸⁹ Constructs must be capable of being logically manipulated. They may be connected with one another in different ways by logical manipulation. The formal connection between constructs consists in their logical relation. The epistemic connection, on the other hand, links constructs to data through the rules of correspondence. The formal connection between constructs holds good so long as the postulates of a theory are

⁸⁹ *The Nature of Physical Reality*, p. 82.

maintained as valid; hence, they are of a hypothetical nature. Sometimes constructs may be connected with one another quite consistently without any apparent connection with Nature; such constructs can have logical validity only if science is able to tie them down to Nature through the rules of correspondence. Margenau pointed out that a definite set of rules of correspondence must be accepted as relatively permanent so that a particular theory may be explained in terms of it. However, the requirement of relative permanence does not indicate the finality of the rules of correspondence. The rules of correspondence have to be changed in the presence of the discovery of new facts. This possibility leaves room for change in a theory; and when a modified scheme of rules is accepted it should be used as an instrument of application in all instances.

According to Margenau, the rules of correspondence have a two-way passage by which we pass from Nature to constructs and from the field of constructs back to Nature. The reversal of the rules of correspondence may be either trivial or non-trivial. In trivial reversal the rules of correspondence of the original path from Nature to constructs is traced back. Here there is a repetition of the original rules of correspondence. But non-trivial reversals require certain complicated steps. For instance, it may be verified whether air vibration is the cause of sound by employing certain indirect methods of confirmation, such as by demonstrating that sound is not produced in a vacuum. The non-trivial reversals are the cases of circuits of confirmation. They are the devices of connecting constructs to Nature. A construct which is verified and consistently connected to Nature is called by Margenau a 'verifact' or a valid construct. However, even a valid construct is alterable for if some new information comes to light the 'verifacts' have to be radically modified or even completely abandoned. Hence, a construct cannot be regarded as valid in a final or absolute sense. Nevertheless, a theory which fulfils the metaphysical requirements of rationality and coherence attains validity through empirical confirmation.

Margenau pointed out that many theories ended in failure because they assumed reality to be absolutely permanent, static and unchanging. This is a wrong conception of the nature of

physical reality. In Margenau's view reality is dynamic; it grows and changes as human knowledge grows and changes.⁹⁰ Modern science gives a strong evidence in favour of this theory. Margenau rejected the belief that reality was the cause of our experience for a great ambiguity centred round the term 'cause'. He, on the contrary, thought that reality was a specifiable part of experience.⁹¹ Science takes experience for granted and believes that reality incorporates our experience. The rules of correspondence are the mental devices for establishing reality; however, though they are important in establishing reality they are not themselves the elements of reality.

Constructs are the key concepts of reality. They are the rational termini of certain rules of correspondence. Margenau, therefore, came to the conclusion that verifacts were the elements of reality. Consequently, he attached a great importance to epistemology.⁹² Empirical confirmation is a very important condition for making a construct valid. Thus, constructs may be said to denote reality when they are the elements of a confirmed theory which has satisfied some of the fundamental metaphysical requirements. Further, once a construct is validated it must be said to have been real before it was formed.⁹³ For instance, Rutherford's neutron was never real, for the properties that he suggested about it were not confirmed. It is also not absolutely improbable that the properties that are assigned to the present conception of neutron may necessitate revision in the light of some new information that may come to light in future. According to Margenau, therefore, reality changes as discovery proceeds. However, verifacts may be regarded as the elements of reality. Consequently, the parts of Nature from which the verifacts originate are also automatically elements of physical reality. Nevertheless, a construct which is proved to be valid to-day may necessitate revision when some new information about it is gathered. Our knowledge of reality changes when certain new discoveries are made in the field of science; and

90 *Op. Cit.*, p. 288.

91 *Op. Cit.*, p. 289.

92 *Op. Cit.*, p. 292.

93 *Op. Cit.*, p. 294.

the new theory which is formulated alters all the basic constructs of the past. It implies that in a new physical theory there is not a mere addition of some new constructs to the superstructure of a previous theory, but, on the contrary, it is a basically different theory with a configuration of totally new constructs. The changing physical theories correspond to the changing physical reality. It may be noted here that Margenau did not identify the physical reality, with the ultimate reality. He evaded the problem of the ultimate reality and regarded it as a hope which may serve as a guiding principle for all sciences. He designated his theory of physical reality as realism.

It must be acknowledged that Margenau's theory of physical reality contains certain valuable suggestions which may be accepted for further verification and for developing a world-view. Since the advent of the new physics it has been established almost beyond doubt that dynamism constitutes the basic nature of reality. According to Margenau, reality is not only dynamic but it alters, changes and grows. He arrived at this conclusion because it was found that at each stage of scientific progress there was always some possibility for discovery of certain new facts. Margenau did not advance clear and convincing arguments to prove his thesis that reality grew as human knowledge grew. It seems to be quite intelligible that the theories concerning the physical reality change from time to time with the discovery of new facts. But Margenau has not been able to prove how the physical reality itself changes with the growth of human knowledge. For instance, Newton explained certain physical phenomena with the help of the construct 'ether'. At a later date Newton's hypothesis of 'ether' was given up when the theory of electro-magnetic field was formulated. It is evident, then, that 'ether' was never a part of the physical reality, but it was only a working hypothesis for explaining certain physical phenomena. Likewise, it cannot be said with absolute certainty that the theory of the electro-magnetic field in its present state is absolutely true. Even the present theory of electro-magnetic field may be changed in future in the light of some new information. It is obvious, then, that theories change from time to time with the discovery of new facts. But it cannot be said

with certainty whether the physical reality also changes with the growth of human knowledge. Margenau could not advance a single convincing argument to prove that the physical reality grew with the growth of human knowledge. His theory of the physical reality is weak and flimsy because he abandoned the objective and the operational method in favour of the speculative method. Therefore, his theory of physical reality seems to be defective within his own system. Besides this, Margenau does not seem to be justified in drawing a sharp line of demarcation between physical reality and the ultimate reality. For if physical reality is at all reality it cannot be fundamentally different from the ultimate reality. Physical reality must be an aspect of the ultimate reality. Our knowledge of physical reality gives us a glimpse into an aspect of the ultimate reality. Margenau, therefore, seems to be wrong when he opines that 'we have no knowledge whatsoever of the ultimate reality'.⁹⁴

A brief survey was made in the preceeding few pages of the philosophical implications of modern physics. It was found on a close examination that the philosophical interpretation of physical reality given by James Jeans and Eddington were unsatisfactory due to their strong idealistic bias. The theory of reality suggested by them was far removed from Nature. Their theories could hardly stand the test of empirical confirmation. The philosophical interpretation of physical reality given by P. W. Bridgman and Henry Margenau appeared to have some cogency. But the main defect in their philosophical interpretation of reality consisted in the fact that their theories were mainly concerned with epistemological problems rather than with ontological problems. It is true that the importance of epistemological problems cannot be underestimated in a philosophical interpretation of modern physics, but at the same time the importance of ontological problems cannot be altogether ignored. It is our main purpose here to point out that the concepts of modern physics yield certain conclusions which have ontological significance. Modern physics has a definite message to offer to philosophy. The constructs of modern physics which have

ontological significance are of great value for the formulation of a world-view. An attempt will be made here to emphasize certain aspects of modern physics which have a definite bearing upon a philosophical interpretation of reality.

One of the important conclusions that modern physics yields is that physical reality is dynamic in both its large-scale and small-scale aspects. This conclusion of physics has an important philosophical consequence. It gives a clue to the fact that reality is essentially dynamic. Our thesis that reality is dynamic is corroborated by the results of modern physics. According to modern physics all physical phenomena are dynamic. Modern physics rules out the possibility of physical reality being static in any aspect. Researches in modern physics have revealed an important truth that dynamism forms one of the basic principles of physical reality. This basic principle of modern physics goes against the fundamental tenets of a host of philosophical systems of the world. If a thorough survey of the philosophical systems of the world is made it will be found that a vast majority of them regard reality as static in some respects or the other. According to such philosophical theories which regard reality as static, dynamism in any form is considered to be an appearance. If reality is regarded as static, it is generally open to various objections. The main difficulty of the views of static reality consists in the fact that the latter cannot account for evolution, change, growth, decay etc. Such philosophical systems tend to deny the law of causality which is one of the fundamental principles of a scientific discipline. The world-views suggested by such philosophical systems which regard reality as static and which ignore some of the fundamental concepts of natural sciences are generally far removed from Nature. Unlike most of the philosophical doctrines which interpret reality as static, the philosophical doctrine upheld in this work interprets reality as basically dynamic. It is one of the fundamental principles of the world-view suggested in this work is that reality is essentially creative, and being so it is also dynamic. It was pointed out earlier that the Absolute is a creative Personality and the finite individuals who emerge out of Nature are also creative personalities in their own spheres, and living and non-living phenomena have also a

most dominant and persistent urge for progressively acquiring stages of well-defined creativity. The creative upsurge of psycho-physical entities in all stages of organization is the source of dynamism. It implies, therefore, from our standpoint that dynamism of physical reality is not fundamentally blind and mechanical, but implies a creative teleology even though this teleology is in an implicit and rudimentary form. In our view the creative teleology is the source of dynamism of the entire reality. The phenomena of temporal sequence, change, causality, evolution and the like can be explained satisfactorily, if it is assumed that reality is fundamentally dynamic. Our thesis that reality is fundamentally dynamic is corroborated by the results of modern physics.

Another important conclusion of modern physics which has a philosophical significance consists in the fact that physical reality is differentiated. Physical reality is composed of a large number of particles. Sub-atomic particles are known as 'fundamental particles'. However, since more and more fundamental particles are coming into light with rapid development in modern physics it has become rather difficult to determine the exact number of fundamental particles and it has also given rise to some doubt whether these particles can be properly described as 'elementary' or 'fundamental'. The gradual discovery of more and more elementary particles hints at the possibility that there may be certain fundamental entities in physical reality which modern physics has not yet been able to unravel. It is our thesis that the ultimate entities of reality including the physical reality are psycho-physical entities. In our view the fundamental particles seem to be nothing but the various states that psycho-physical entities acquire in the process of acquiring dynamic organizations. In our view an atomic system seems to be one of the most early forms of dynamic organizations. It seems to be quite likely that atomic systems constitute the first configurations of psycho-physical entities. They constitute perhaps the earliest form of emphasis of reality into dynamic structures. Perhaps Nature came to possess the earliest configuration of atomic systems through the organization of psycho-physical entities into dynamic structures. Atomic systems, therefore, seem

to be nothing but the 'concentration', 'focalization' or 'emphasis' of psycho-physical entities into dynamic organizations. They undergo some kind of transformation and are resynthesized into living phenomena. Organic phenomena also are dynamic organizations, but they are of a more complex nature than atomic systems. Human personalities are more complex organizations than the less complex types of living organisms. It is evident, then, that there is a hierarchy of organizations of which atomic systems seem to be the earliest and simplest organizations. Nature, therefore, seems to be a configuration of a hierarchy of dynamic organizations due to the concentration or emphasis of psycho-physical entities. In our view Nature is structured of which psycho-physical entities are the ultimate constituents. Our thesis that reality is differentiated and structured finds its support from the results of modern physics. Further, in our view the ultimate constituents of Nature are all fundamentally alike; there are absolutely no differences of degrees between them; they are absolutely identical with one another from the qualitative as well as quantitative points of view. It is evident, then, that psycho-physical entities are simple entities. Complexities and diversities that are observed in Nature are due to the dynamic organization of psycho-physical entities. Various dynamic organizations of psycho-physical entities differ from one another due to their different degrees of complexity. It is evident, then, that there are absolutely no differences in the ultimate constituents of Nature, but rather the differences are due to the different degrees of complexity of the dynamic organizations of psycho-physical entities.

Modern physics yields another important conclusion which has a philosophical significance. In modern physics the dual nature of matter has been emphasized both in its large-scale and small-scale aspects. It was assumed in Newtonian physics that space and time were mutually independent concepts. It was first pointed out by Minkowski and later accepted by the modern physicists that Space-Time was a four-dimensional continuum with three dimensions of Space and one dimension of Time. Space and time are the two aspects of the same phenomenon. In classical physics physical phenomena were supposed to be

located in space and undergoing change in time. But in modern physics space and time, and matter and energy have merged into a unified picture. In modern physics space-time is not a receptacle of physical phenomena, but rather matter and space-time have merged into a unified picture. According to Einstein, matter represents mass and field represents space. However, there is no fundamental difference between matter and field. Matter is the region where concentration of energy is great and field is the region where concentration of energy is little.' In other words, matter may be regarded as a region in space where field is very strong and concentrated. In classical physics it was assumed that mass and energy were mutually independent concepts. But in modern physics a reconciliation is brought about between the concepts of mass and energy, and now mass and energy are regarded as identical. Mass possesses energy, and energy has mass. The energy of a material system is proportional to its mass. The unification of matter and energy implies that there is a close relation between matter and radiation or light. Material particles are capable of giving rise to radiation, and radiation is capable of condensing into matter. Radiation is not fundamentally different from matter, but rather the former is only a refined form of matter. It is obvious, then, that matter and light are only two different aspects of energy. There is a two-way path between matter and radiation, so that matter is capable of dissipating into radiation, and radiation may condense into matter. It is obvious, then, that matter and radiation are basically identical. Furthermore, both radiation and matter have a dual nature. Not only radiation has the dual nature of particle and wave, but matter also has these two aspects. Sometimes matter as well as radiation exhibits the properties of particles and sometimes those of waves. It is now believed by contemporary physicists that both the particle aspect and the wave aspect exist simultaneously in matter as well as radiation. It may be concluded, therefore, that from the standpoint of modern physics there is inseparable union between space and time, matter and radiation, and particle and wave. The two aspects of physical phenomena seem to be the expressions of some basic principle. From our philosophical standpoint the dual

nature of matter seems to be an expression of the dual nature of psycho-physical entities. Psycho-physical entities are the ultimate entities of Nature. A psycho-physical entity has dual aspect. The physical aspect of a psycho-physical entity refers to its principle of position, and the physical aspect refers to its principle of dynamism. The spatial position and temporal dynamism are simultaneously together in a psycho-physical entity. In our view, stability is the expression of greater emphasis of the principle of position than the principle of dynamism, and creativity is the expression of greater emphasis of the principle of dynamism than the principle of position. Mass is the expression of the principle of position, and energy is the expression of the principle of dynamism. Mass and energy are inseparable since they are the expressions of dynamic organization of psycho-physical entities. Stability and instability are the two expressions of dynamic organizations of psycho-physical entities. Consequently, pure permanence is as much a misnomer as pure flux. Stability and instability, permanence and flux are mutually complementary to each other. They are in a sense relative to each other. The principle of dynamism is burdened with its complementary principle of stability, and the principle of stability is upset by its complementary principle of creative upsurge. It goes without saying that the principle of stability is the expression of the aforesaid principle of position, and the principle of creative upsurge is the expression of the principle of dynamism. These basic concepts of our philosophical system are applicable to physical phenomena. From our philosophical standpoint atomic systems have originated from the dynamic configuration of psycho-physical entities. Atomic systems are the dynamic organizations of psycho-physical entities. They are the building-blocks of physical reality. It seems to us that the duality of physical phenomena is due to the fact that they are the configurations of psycho-physical entities. They partake of the nature of psycho-physical entities. A physical phenomenon has spatial position indicating theory that it has some mass, and it has an aspect of 'psyche' which is the source of its dynamism. The 'psychic' aspect of a physical phenomenon steers its dynamism in accordance with the specific nature of the latter. A physical

phenomenon, therefore, seems to have its innate teleology. Each particle of matter has its specific nature, and the specific nature of each accounts for the difference of behaviour between the different types of particles. It seems, therefore, that each particle has its specific teleology; and each dynamic organization of material particles has its specific teleology. This principle of organized system of teleologies becomes more distinct and well-defined when the nature of living phenomena is studied. It is observed, for instance, that each organism has its teleology, and even each cell or each enzyme composing the organism has its specific teleology. The teleology of each dynamic organization of psycho-physical entities is determined by the latter's structure. In our view the Absolute is creative in its nature; and our world which was created by the Absolute also shared in the creative teleology of the latter. Since our world partook of the creative teleology of the Absolute the entire Nature together with all its evolutes has inherent creative teleology. It is because of this creative teleology which is inherent in the universe that dynamism and creativity is found in every level of existence in Nature, starting from atomic systems to highly developed personalities. The dynamic organization of psycho-physical entities gives rise to atomic systems; the dynamic organization of material molecules in certain specific ways gives rise to living phenomena; and the dynamic organization of living cells in certain specific ways gives rise to well-developed creative personalities. Thus, atomic systems seem to be the first dynamic organizations of psycho-physical entities in our world. They seem to be the first teleological organization with incipient upsurge for creative advance. In conclusion it may be said that the dual aspect of matter is the expression of psycho-physical entities.

Finally, researches in modern physics have revealed another important principle which has a great philosophical significance. It has been discovered through persistent investigation that the behaviour of sub-atomic phenomena cannot be explained satisfactorily from the standpoint of deterministic laws. Deterministic laws of classical physics have been replaced by indeterministic laws of quantum mechanics. It is now an admitted fact that it is impossible in principle to know the exact

position and velocity of a particle at any given time. It was previously believed that Heisenberg's principle of indeterminacy merely referred to the limitations of human capacity for knowledge of sub-atomic particles. But it is now admitted by most of the contemporary physicists that indeterministic laws constitute the first principles of Nature, and Heisenberg's principle of indeterminacy merely confirms those laws. It is believed by the majority of the contemporary physicists that physical phenomena behave in accordance with indeterministic laws rather than with deterministic laws. Sub-atomic phenomena seem to violate some of the basic requirements of deterministic laws. Elementary particles seem to have some sort of internal freedom. The validity of probability laws in physics gives sufficient hint to the fact that indeterministic laws predominate in determining the behaviour of physical phenomena. Max Born believed that a return of modern physics to the classical view of causality seemed to be rather improbable. He opined that indeterministic foundations of quantum mechanics were permanent. Henry Margenau observed that from the philosophical point of view the principle of uncertainty might be regarded as a manifestation of what was generally regarded as the haziness of Nature. Alfred Landé also believed that the deterministic interpretation of physical reality was a purely academic construction. He aptly pointed out that the deterministic interpretation of physical reality leads to a doctrine of pre-established harmony,—a doctrine which is outmoded in the light of new information in physics. The deterministic interpretation of physical reality is, therefore, regarded at present as a scientific dogma. It is believed by the majority of the contemporary physicists that a return in future to the deterministic interpretation of physical reality is rather improbable. It is also believed by the majority of the contemporary physicists that the indeterministic foundations of physical reality is one of the first principles of physical reality.

It may be mentioned here that indeterministic laws are not only operative in the realm of physical phenomena, but they are also operative in the realms of living and conscious phenomena. All phenomena of Nature express themselves in accordance with indeterministic laws. However, in spite of the fact that all

phenomena of Nature express themselves in accordance with indeterministic laws, there are certain levels of existence that are more distinctly subject to these laws than others. Living phenomena behave in more indeterministic fashion than non-living phenomena, and conscious phenomena behave in a far more indeterministic way than living phenomena. This progressive explication and distinctness of indeterministic laws through the behaviour of the various phenomena of Nature is due to the fact that creativity manifests itself more distinctly in the more complex forms of existence than in the less complex forms of existence. Living phenomena have greater independence than non-living phenomena, and creative personalities have still greater freedom than living phenomena in relation to environmental conditions. Living phenomena are less affected by environmental conditions than non-living phenomena, and likewise creative personalities are still less affected by environmental conditions than living phenomena. It is obvious, then, that greater is the complexity of dynamic organizations of psycho-physical entities the greater is their creativity; and the greater is the creativity of dynamic organizations the greater is their indeterministic modes of behaviour. The levels of creativity are determined by the different degrees of complexity of dynamic organizations of psycho-physical entities; and the greater is the complexity of dynamic organizations of psycho-physical entities the more distinct are their indeterministic modes of behaviour. In other words, the nature of freedom of a dynamic organization of psycho-physical entities is determined by the latter's complexity of structure and level of creativity. From the standpoint of physics physical phenomena appear to obey deterministic laws when the behaviour of groups of particles are observed, but when the individual particles are observed they seem to behave in accordance with indeterministic laws. However, from our philosophical standpoint physical phenomena appear to obey deterministic laws because the former have the lowest degree of creativity, and as such their indeterministic mode of behaviour is less distinct. In our view deterministic and indeterministic laws are complementary. Deterministic laws are the expressions of the principle of position,

and indeterministic laws are the expressions of the principle of dynamism of psycho-physical entities. The greater is the emphasis of the principle of position in a dynamic organization of psycho-physical entities, the more explicit is the latter's mode of behaviour in accordance with deterministic laws, and the greater is the emphasis of the principle of dynamism in a dynamic organization of psycho-physical entities, the more explicit is the latter's mode of behaviour in accordance with indeterministic laws. Consequently, both deterministic and indeterministic laws have their significance from certain specific points of view. If the attitudes of classical physics and quantum mechanics are interpreted from our philosophical standpoint, it will be found that classical physics mainly emphasized the principle of position and the contemporary quantum mechanics emphasizes mainly the principle of dynamism in a dynamic organization of psycho-physical entities.

In contemporary quantum mechanics deterministic laws are regarded as outmoded and indeterministic laws are regarded as the first principles of physical reality. This interpretation of quantum mechanics seems to be quite correct because indeterministic laws are more distinct than deterministic laws in the final analysis of physical phenomena. The distinctness of indeterministic laws in Nature is due to the fact that incipient creative upsurge tries to predominate over the principle of stability in a dynamic organization of psycho-physical entities. Einstein believed that there were hidden deterministic laws in Nature which have not yet been unfathomed by physics. Einstein's faith in hidden determinism in physical reality does not seem to be absolutely unfounded at least from our philosophical standpoint. In our view the hidden determinism at the heart of physical reality is perhaps due to a tacit recognition of the principle of stability, being the expression of the principle of position, of dynamic organizations of psycho-physical entities. However, the hypothesis of hidden determinism is generally regarded as outmoded by the majority of contemporary physicists. The fact that indeterministic laws generally appear to eclipse deterministic laws is due to the fact that the principle of creative teleology predominates over the principle of stability in dynamic organizations of psycho-physical

entities. However, the behaviour of large-scale physical phenomena can be explained from the point of view of deterministic laws because the indeterministic mode of behaviour of individual sub-atomic particles is so negligible that when the behaviour of groups of particles is observed the indeterministic mode of behaviour of individual particles is eclipsed into insignificance due to the overbearing impact of deterministic laws as determined by the emphasis of the principle of stability of congregating particles of the lowest degree of creativity. That is the reason why the large-scale physical phenomena have the semblance of behaving in accordance with the deterministic laws in spite of the fact that each individual particle has basically the indeterministic mode of behaviour. It is evident, then, that deterministic and indeterministic interpretations of physical reality are from different points of view. Physical phenomena in their final analysis behave in accordance with indeterministic laws; but when they are observed in large groups they are found to behave in accordance with deterministic laws which are otherwise known as the laws of probability. However, compared to non-living phenomena living phenomena have greater complexity of structure, and therefore, greater urge for creativity; and creative personalities have still greater complexity of structure, and therefore, still greater urge for creativity compared to living phenomena. Consequently, there is progressive development of indeterministic mode of behaviour with increasing complexity of structures of dynamic organizations of psycho-physical entities implying thereby the gradual waning of deterministic laws. It is obvious, then, that deterministic and indeterministic laws are not independent principles in themselves in accordance with which the various phenomena of Nature behave, but rather the former are inseparably tied up with the nature of psycho-physical entities. Consequently, the laws of behaviour of the various phenomena of Nature are determined by the various types of complex structures that are arrived at through the organization of psycho-physical entities. In other words, the mode of behaviour of a particular type of dynamic organization of psycho-physical entities whether according to deterministic or indeterministic laws is determined by the specific structure of the

latter. Thus, our philosophical standpoint presents a simplified picture of reality by correlating the laws of behaviour with varying degrees of complexity of structures of dynamic organizations of psycho-physical entities. Finally, it may be pointed out that even though deterministic and indeterministic laws are inseparably united together, being the expressions of the principles of stability and creativity, the indeterministic laws always predominate over the deterministic laws since creative teleology is at the heart of Nature. Hence, there is the crowning importance of indeterministic laws in Nature.

CHAPTER III

THE NATURE OF LIVING PHENOMENA

It was known from quite an early date of the history of mankind that there was some difference in the behaviour of the living from those of the non-living, and scientists down the ages made persistent efforts to clearly understand the nature of the living phenomena. Aristotle for the first time made an attempt to formalize biology. According to him the transition from the non-living to the living is due to the appearance of the soul. In his view the *pneuma* is the active principle which under the influence of desire in the soul produces bodily movements. The *pneuma* is also present in the seed and it is an indispensable principle of generation. Aristotle for the first time suggested the principle of natural selection. According to him the front teeth of an animal are sharp because they are adapted for dividing, and the hind teeth are flat because they are adapted for grinding and masticulating. He suggested that adaptation was oriented towards an end. He also built up a natural history museum in which he tried to arrange the specimens of the various living forms according to their natural affinities. This was one of the earliest attempts at formalization in the biological science.

It may be mentioned, however, that the primitive people had quasi-scientific knowledge of the nature of the living phenomena. The primitive people had some knowledge of growth, development, assimilation, reproduction, decay and the like. The people of Egypt and Mesopotamia, for instance, knew the method of artificial pollination of the date palm many centuries before the birth of Christ.

The experimental method was employed for the first time in biology in the seventeenth century. In 1694 Camerarius discovered through his experimental investigation that reproduction in plants involved sexuality like those in animals. In 1760 Kölreuter for the first time performed experiments in plant hybridization. These were some of the early attempts in experimental biology.

The nineteenth century may be described as the era of great achievements in the realm of biological sciences. J. B. Lamarck first published his views on the nature of the living phenomena in 1801 and subsequently developed them between 1809 and 1815. In these works he upheld the thesis that all species of living forms, including men, originated from some other species. He believed that the simplest forms of plants and animals came into existence first and the living forms with complex organic structures evolved out of the simpler living forms. He thought that the human species descended from the ape-like mammals. He maintained that the evolution of the complex living forms from the simpler ones evolved according to certain laws. The laws of organic evolution enunciated by Lamarck may be briefly summarized as follows: First, deep desires and needs on the part of the organisms tend to bring forth new organs. Secondly, new wants in the organisms give rise to new movements which in their turn produce new organs. In other words, change of needs involves change of habits. Thirdly, changes in the different parts of an organism may be produced due to the effects of use and disuse. The parts of an organism formerly less used become with exercise more developed, and other organs may deteriorate through disuse. Fourthly, the new changes that are produced in the organism of an individual are transmitted to the offspring through heredity. Lamarck pointed out that centuries ago the giraffe did not possess a long neck; but the persistent effort on the part of the giraffe to reach the tender leaves at the top of the trees slightly elongated its neck and this newly acquired character was transmitted to the offspring through heredity. Lamarck believed in the law of progressive development. He also believed in spontaneous generation and thought that the living phenomena developed out of the non-living. He maintained that the manifestations of the living phenomena depended upon the physico-chemical causes.

Considering the age in which Lamarck lived his contribution to the theory of evolution is quite noteworthy. His thesis that use strengthens an organ and disuse weakens it is now recognized as a definite law. It is also true that complex living organisms have evolved out of simpler organisms. In this respect Lamarck's

view anticipated Darwin's theory of evolution. However, there are certain aspects of Lamarck's theory which are doubted by the modern biologists. Most of the modern biologists doubt Lamarck's theory that certain organs have come into existence due to the presence of certain needs within the organism of an individual. It is also doubted by most of the biologists that a new character that is acquired by an individual is transmitted to the offspring through heredity. Dobzhansky remarked that the error in Lamarck's view consisted in the fact that the latter failed to recognize the difference between the genotype and the phenotype.¹ A genotype is a class of individuals having the same germinal make up or hereditary factors, whereas a phenotype is a class of individuals which appear to be alike regardless of their germinal make up. A genotype is potentially capable of producing multitude of phenotypes for proper adaptation to the varying environmental conditions. A phenotype is the by-product of a genotype. Lamarck's theory of the inheritance of acquired characters was, therefore, erroneous due to his ignorance of the distinction between the genotype and phenotype.

The biological works of Lamarck were followed by those of Charles Darwin. The publication of Darwin's *Origin of Species* was a remarkable achievement in the field of biology. Darwin concluded from his observation of the natural affinities of living forms, embryological similarities, geographical distribution, geological succession and the like that the various species of living forms might have originated from other species like varieties.² According to Darwin, living organisms are extremely prolific. Organisms procreate in geometrical progression. However, the offspring slightly vary from their parents. Out of the total number of offspring some individuals are stronger, some swifter, some hardier, and some more cunning than the rest. If any particular variation is preserved, it goes on increasing in number from generation to generation. Darwin

1 Dobzhansky, T., *Genetics and the Origin of Species*, New York, Columbia University Press, 1951, p. 21.

2 Darwin, C., *The Origin of Species*, New York, Carlton House, 1872, p. 12.

also observed that the preserved species tended to become more and more improved in relation to their environmental conditions. The process of preservation of the favourable individual differences and variations and the destruction of the unfavourable ones was called by Darwin the Survival of the Fittest or Natural Selection.³ It must be mentioned here that Darwin used the expressions 'Natural Selection' and 'Survival of the Fittest' in a metaphorical sense for the sake of brevity of language. Darwin observed that new species of organisms came into existence and others became rarer and finally extinct through the process of Natural Selection.⁴ Natural Selection does not produce modification in a species of organism for the good of other species of organisms. Natural Selection is not governed by any utilitarian principle. Only individuals of a living species survive which can adapt themselves to the environmental conditions. Darwin believed that variations were produced in the living forms through a slow and gradual process. He, therefore, believed that the evolutionary process was gradual and continuous without any abrupt change. According to him, the variation in species of living organism is due to pure 'chance.' By the expression 'chance' Darwin meant a large number of unknown natural causes. Darwin, therefore, ruled out the teleological interpretation of the evolutionary process.

It must be admitted that Darwin's contribution to the biological sciences was the greatest in the nineteenth century. Some of the biological laws that Darwin formulated in his own days hold good even to-day. It is now considered to be an established fact that all living organisms have originated from some common stock. Darwin could visualize this fact through his keen observation of the natural distribution of species on earth down the ages. This suggestion of Darwin proved to be of great heuristic value for the future biologists. Being an objective scientist Darwin refrained from making any premature philosophical speculation on the basis of his observed data. He arrived at the conclusion on the basis of his observation that

³ *Op. Cit.*, p. 64.

⁴ *Op. Cit.*, p. 83.

survival of the fittest was due to pure chance. A vast majority of biologists agreed with Darwin on this point. Darwin opened a new line of thought in biological investigation.

While Darwin confined his view to the description of objective facts, August Weismann took a speculative jump and proposed a theory of inheritance. Weismann suggested that each organism possessed a hereditary substance or germ-plasm which was made up of separate units, each determining a particular character of an organism. In order to avoid the possibility of duplication of the germ plasm units in the offspring, Weismann postulated that prior to mating the germ-plasm units in the male and the female organisms reduced themselves to half so that the hereditary substance could remain the same in the offspring. According to him, the germ-plasm of an organism is transmitted to the offspring from generation to generation. He assumed that the germ-plasm of an organism was potentially immortal and might continue to exist from generation to generation. Weismann got this idea from the study of the nature of the protozoans of one-celled organisms. A protozoan multiplies by division, and each half develops into a complete individual which again multiplies through division; and in this way the division of an individual takes place *ad infinitum*. Thus there is an unlimited persistence of an individual protozoan which may be regarded as potential, though not absolute, immortality of an individual so long life lasts on earth. While the one-celled organisms are thus immortal, only the germ cells of the metazoans or the many-celled organisms are immortal. Weismann made a distinction between the body-cells and the germ-cells. He believed that the soma-cells or the body-cells which were solely concerned with the nutrition of organisms were destructible. The changes in the body which are acquired in the life time of an individual cannot be transmitted to the offspring through heredity. Weismann amputated the tails of mice to disprove Lamarck's theory of inheritance of acquired characters and he found that the offspring of the mice with amputated tails were not born with amputated tails. Weismann, therefore, ruled out the possibility of inheritance of acquired characters. He believed that a germ plasm gave rise

to a germ plasm as well as a soma plasm in the offspring; but a soma plasm never gave rise to a germ plasm. A complete organism may, therefore, develop out of a germ plasm. The germ cells constitute the immortal part of the many-celled organisms. Weismann contended that heredity consisted in the transmission of the germ cells from one generation to another; in other words, heredity was nothing but the continuity of the germ plasm. It was assumed that the germ plasm possessed a highly complex, but extremely stable structure. A portion of the specific germ plasm, which is not used up in producing the offspring is transmitted unaltered to the new generation. Thus, new germ plasms arise directly from the parent germ plasms. According to Weismann, variations are not due to the influence of the environmental conditions, nor due to use or disuse of organs, but due to the conjugation of the germ plasm from the male and the female. Heredity, then, is due to variation in the germ plasm. It is true that there are many defects and inadequacies in Weismann's doctrine mainly due to the fact that his hypotheses were based upon speculation rather than upon definite experimental data. It may be admitted, however, that modern biology owes a lot to Weismann's doctrine in spite of the fact that it has many defects.

Great changes took place in the biological sciences during the first quarter of the twentieth century. Biology, which remained for a long time a descriptive science, was gradually raised to the status of a theoretical science through causal discipline. Mendel's biological researches in the year 1900 gave a new momentum to the biological progress of the new era. He obtained definite results through his experiments on artificial hybridization with the garden peas. His researches heralded the development of the new science of genetics. He enunciated certain laws of inheritance which stated the ways in which the hereditary characters of the parents were inherited by the hybrid offspring. His method of approach to the problem of inheritance was correct, but his analysis of the data obtained through hybridization experiments were unsatisfactory because he did not have sufficient experimental device at his command. According to Julian Huxley, the notion of Mendelian characters is at present

obsolete.⁵ It must be admitted, however, that Mendel's theory of inheritance was the first stepping stone to the development of modern genetics.

De Vries worked on the same lines as suggested by Mendel, but curiously enough he obtained entirely new results. He found to his great surprise that there were sudden genetic changes without any apparent cause in the species of evening primrose which he reared up in his garden for observation. It was a startling discovery. De Vries pointed out that this sudden variation in the species was due to 'mutation'. It was De Vries who brought the term 'mutation' into use to signify sudden change. It may be mentioned here that the term 'mutation' was first used in 1868 by Waagen, a paleontologist, to signify an identifiable stage in a continuously evolving lineage. De Vries, on the other hand, used the term 'mutation' to signify hereditary change. He formulated a theory of evolution by mutation on the basis of the data obtained from the observation of sudden variations in the species of evening primrose. According to him, the variation in the species of living organisms is a discontinuous process. The mutations give rise not only to different species of living organisms, but also to varieties within the species. De Vries pointed out that the mutant types were not merely slight degrees of departure from the original type, but they sharply and completely differed from the species from which they arose. The mutant variations were entirely new and independent types of species.

De Vries' theory of evolution by mutation brought about a revolutionary change in the biological science. His theory hinted at the fact that evolution was not a flat and discontinuous process, but rather it was discontinuous with abrupt variations in the species very much like the quantum jumps of the material particles. Schrödinger observed that the quantum theory in physics and the mutation theory in biology developed almost at the same time; he, therefore, threw a suggestion that perhaps some link might be found between the quantum theory and the mutation theory when sufficiently advanced study was made in

⁵ *Evolution: The Modern Synthesis*, London, George Allen & Unwin, 1944, p. 62.

these two sister sciences.⁶ The greatest contribution of De Vries' theory consisted in the fact that he developed the experimental method for studying evolution. It was, therefore, necessary that Darwin's theory of evolution by natural selection which was mainly based upon the facts of observation had to be replaced by De Vries' theory of evolution by mutation which was mainly based experimental data. It must be admitted, then, that De Vries' theory of mutation heralded the beginning of a new era in the biological science.

The science of genetics developed with rapid strides since the publication of De Vries' mutation theory. In 1902 McClung first discovered the chromosomes which are the repositories of hereditary factors. In 1903 W. L. Johannsen began his experimental work on genetics and in 1909 introduced the term 'gene' into the biological science. He discovered that there was some entity in the gametes or the fertilized eggs which determined the characters of organisms. He called that entity in the fertilized egg which determined the nature of the growing organism the 'gene'. He observed that the different characteristics of an organism were determined by the genes which were present in the germ cells. In 1911 he first recognized the difference between the genotype and the phenotype. He employed the term 'genotype' to signify the hereditary characters that an individual receives from his parents, and he used the term 'phenotype' to signify the external appearance and peculiarities of an individual, such as size, shape, colour and the like. In other words, the term 'genotype' refers to the class of individuals possessing the same genes, whereas the 'phenotype' refers to the class of individuals who appear alike regardless of their hereditary make up. The credit goes to Johannsen who pointed out that species of living organisms differed from one another not on the basis of their external features, but rather on the basis of their genetic substance. It is obvious, then, that Johannsen was one of the most outstanding pioneers in experimental genetics.

T. H. Morgan's work on genetics was more systematic

6 *What is Life?* Cambridge, Cambridge Press, 1955, p. 48.

than that of Johannsen. According to him, genes are located in chromosomes. The chromatine lies in the nucleus of a cell in the form of a thread-like material. When a cell is about to divide the surrounding walls of the nucleus disappear and its chromatine is condensed into bodies known as chromosomes from the extremities of which star-like structures extend into the protoplasm. Chromosomes retain their individuality through the successive cell-divisions. Morgan observed that each chromosome retained its individuality through the successive divisions due to the fact that it contained fixed number of genes which lay arranged in a linear order.⁷ There may be hundreds of genes in a chromosome. Morgan pointed out that whenever there was some change in a single unit in a chromosome there was a 'point mutation'.⁸ Innumerable instances of point mutations have been found in plants and animals in natural as well as artificial conditions. Changes produced by a point mutation may affect a part of the body or the entire body.⁹ Morgan, therefore, maintained that evolution was something more than a mere perpetuation of the living forms that come into existence in the universe. New species of living forms appear in the course of evolution through occasional mutations in the original species of living forms. These mutations occur sporadically and in many directions.¹⁰ Morgan remarked that Darwin's theory of evolution might be justified on the ground that the new species of organisms emerged from the original species of living forms through mutations. Since Morgan adopted the objective method in his biological researches, he avoided making any philosophical speculation regarding the nature of living phenomena; on the contrary, he thought that the metaphysical theories would fade into insignificance as scientific knowledge accumulated and become more precise.

Hans Driesch was an enthusiastic exponent of the vitalistic theory of living phenomena. He maintained that a physico-chemical explanation of living phenomena was inadequate. He

7 *The Scientific Basis of Evolution*, London, Faber & Faber, MCMXXXII, p. 26.

8 *Op. Cit.*, p. 32.

9 *Op. Cit.*, pp. 33-4.

10 *Op. Cit.*, p. 150.

pointed out that the development of an organism could not be explained purely in terms of physical and chemical agents.¹¹ He believed that some other principle than the physico-chemical agent was necessary in accounting for the development of living phenomena. He maintained that the living principle was an independent entity in itself, and hence, it could not be explained in terms of matter. A living organism, according to him, is not a machine, but rather it is an 'entelechy'. A living organism has its own laws of development, assimilation, reproduction, decay and the like. Driesch believed that the 'entelechy' guided the organic development. Thus, he pinned his faith on vitalism or the autonomy of living phenomena.

The vitalistic theory of Driesch has been criticised by a large number of biologists because the former abandoned the objective method in biology and indulged in philosophical speculation. It is quite obvious that Driesch could not satisfactorily account for the nature of living phenomena and instead tried to cut the Gordian knot by introducing a mysterious principle called the 'entelechy'. J. S. Haldane remarked that the evidences given by Driesch were inconclusive when the latter stated that development occurred independently of the stimuli from the environment.¹² If the living principle transcends the physical phenomena, the former cannot affect the latter.

J. Loeb's theory of the living phenomena is diametrically opposed to the theory of Driesch. Loeb compared the living organisms to machines. He explained the living phenomena from the physico-chemical point of view. He maintained that the living phenomena were mainly composed of colloidal substances which possessed the properties of developing, preserving, and reproducing themselves automatically.¹³ Living organisms are chemical machines, and these machines are formed out of certain chemical reactions. Living organisms are mainly composed of different types of colloidal substances. Chemical reactions take place quickly and automatically in the body due

11 *The Science and the Philosophy of Organism*, 1907, p. 142.

12 *Op. Cit.*, p. 72.

13 *The Dynamics of Living Matter*, New York, Columbia University Press, 1906, p. 1.

to the presence of catalyzers or enzymes. A living organism makes its own catalyst. It is composed of different types of chemical compounds, such as, proteins, fats, carbohydrates, salts etc. Loeb maintained that life depended upon the existence of colloidal solutions in cells, and all those agencies which brought about a general gelation, brought life to a standstill condition.¹⁴ He maintained that machines could be constructed artificially and they could be kept going if the energy required by them could be regulated automatically.¹⁵ Living organisms continually transform the inorganic material into living matter through fast chemical reactions; and the chemical reactions involved in the living organisms are in no way different from those involved in inorganic matter. These facts led Loeb to think that *abiogenesis* or emergence of the living from the non living was possible on experimental grounds.¹⁶ Loeb ruled out the thesis of the vitalists who maintained that there was a principle called 'entelechy' which guided the behaviour of living organisms. He remarked that such an assumption was incompatible with the basic principles of physics and chemistry. He observed that each organism was characterized by a definite form, and that this form was determined by specific chemical substances. He pointed out that the essential property of a living organism consisted in the fact that it had the capacity of synthesizing its own specific materials from the non-specific chemical substances of the surrounding materials.¹⁷ He remarked that the property of transforming simple chemical compounds into complex ones was one of the secrets of living phenomena. He maintained that death was due to cessation of oxidation in an organism; and that if oxidation was once interrupted it could not be restored by artificial respiration. He pointed out that the medulla oblongata suffered an irreparable injury if it was deprived of oxygen even for a very short time; and that as a result of this irreparable injury to the medulla oblongata respiration stopped permanently as a consequence of which the tissues of the organism gradually

¹⁴ *Op. Cit.*, p. 37.

¹⁵ *Op. Cit.*, p. 117.

¹⁶ *Op. Cit.*, p. 223.

¹⁷ *The Organism as a Whole*, New York, G. P. Putman & Sons, 1916, p. 23.

disintegrated.¹⁸ He, therefore, concluded that sustenance of life in an organism was due to the presence of oxygen and through the supply of nutritive substances to the body. Loeb accepted De Vries' thesis that the process of evolution was discontinuous; consequently, he rejected Darwin's idea of gradual evolution of living organisms. In agreement with De Vries Loeb believed that a species of organism could remain constant for thousands of years followed by a sudden mutation in the offspring, while the original species of organism continued to exist.¹⁹ He rejected the hypothesis that evolution through mutation was preceeding according to a plan. He called such a view anthropomorphic.²⁰

Loeb's hypothesis regarding the nature of living phenomena contained certain valuable suggestions which were studied in greater detail by the biologists who succeeded him. It is an undeniable fact that a living organism has a physico-chemical structure and that its behaviour can be explained partially from the physico-chemical point of view. It is also admitted by the modern biologists that a living organism is composed of colloidal substances which synthesize simple chemical compounds into complex ones within the organism. Loeb's physico-chemical interpretation of the living phenomena was a source of inspiration for the future biologists.

L. J. Henderson also defined a living organism as a physico-chemical mechanism.²¹ He observed that the living organisms were relatively complex and stable, and that they had sufficient protective devices against possible environmental changes. He maintained that the thermochemical properties of organic compounds and the thermal properties of water were favourable to the living phenomena.²² According to him, water enhances the complexity of the environment; it is favourable to existence of colloidal systems which are the constituent factors of living organisms; it is also one of the main sources of mobility. In his view there is a reciprocal relationship between the organism

18 *Op. Cit.*, pp. 359-60.

19 *The Dynamics of Living Matter*, pp. 224-5.

20 *Op. Cit.*, p. 225.

21 *The Fitness of the Environment*, New York, Macmillan Co., 1913, p. 31.

22 *Op. Cit.*, p. 256.

and the environment.²³ The complex and relatively durable organism is endowed with the capacity for metabolism. The organism is engaged in the exchange of material with the environment, Henderson observed that there was reciprocal relation between the fitness of the organism, on the one hand, and the fitness of the environment, on the other; and that the relation between the two was so close that neither of the two could be considered as less important than the other.²⁴ His contention was that each organism fitted into its particular environment. He also observed that there was possibility of the presence of dormant life almost everywhere in the universe except only in the neighbourhood of the sun.

The merit of Henderson's theory lies in the fact he emphasized the reciprocal relation between the organism and the environment. It was recognized by the later biologists that each organism fitted into its specific environment, and that those organisms which were not fitted into a particular environment either searched for another suitable environment or were exterminated. This was a new interpretation of 'natural selection' given by Henderson.

Rapid progress took place in the biological sciences after the first quarter of the twentieth century; and H. J. Muller's contribution during this period is most noteworthy. Muller devised new experimental methods for studying the nature of the ultimate elements of the living phenomena. In 1927 Muller demonstrated that gene mutation could be induced artificially through X-ray radiation. He found that the frequency of gene mutations increased through X-ray radiations, and this frequency of gene mutations was exactly proportional to the total dose of radiation applied.²⁵ He observed that even the smallest dose of radiation could produce mutation; and that once a mutation was produced it brought about an irreversible change in the organism. Mutations could also be produced by certain environmental conditions, such as concentration of oxygen, change in temperature and the

²³ *Op. Cit.*, p. 267.

²⁴ *Op. Cit.*, pp. 271-2.

²⁵ 'Radiation Damage to the Genetic Material', *Science in Progress*, Ed. Baitzell, G. A., New Haven, Yale University Press, 1951, Seventh Series, pp. 101-2.

like. This led Muller to believe that certain chemical reactions were involved in the process of mutation.²⁶ Muller found that mutations took place in different directions; and that they produced changes of various degrees ranging from the smallest to greatest. However, in a majority of cases the changes brought about through mutations were small and sometimes even invisible.²⁷ He observed that major changes in an organism through gene mutation were generally harmful for its survival, whereas smaller changes were less detrimental. However, if a particular mutation is beneficial for an organism, it will tend to multiply in the course of succeeding generations and will serve as a ground for further mutations.²⁸ According to Muller, each chromosome consists essentially of desoxyrindonucleoprotein thread with thousands of functionally distinct and individually self-reproducing units called 'genes'.²⁹ Each unit of gene in a chromosome has the property of binding together the surrounding raw materials and thus constructing an exact copy of itself for self-reproduction. Even in an instance of permanent mutation, a gene guides the synthesis of materials in such a way that the change in the internal configuration brought about through mutation is incorporated in the new copy. A mutant gene has, therefore, the property of reproducing its exact copy. In sum, a gene has the property of guiding selection, according to its inherent nature. Each gene has the property of undergoing an extensive evolution involving a long series of mutational steps whereby complex organisms come into existence. However, since mutations are not designed in advance for useful ends the vast majority of them are unsuited for survival, but those mutants which are adapted for survival tend to multiply. Evolution not only involves a series of mutational steps, but it also involves increase in the number of genes in the various species of organisms though at a relatively slow rate. However, in spite of the fact

26 *Op. Cit.*, p. 105.

27 'The Development Of The Gene Theory', *Genetics in the 20th Century*, Ed. Dunn, L.C., New York, Macmillan Co., 1951, pp. 89-90.

28 Muller, F. H., 'The Gene', *Proceedings of the Royal Society of London*, Series B., Vol. 134, 1947, p. 14.

29 Muller, F. H., 'The Nature of Genetic Effects Produced by Radiation', *Radiation Biology*, Ed., Hollaender, New York, McGraw Hill Book Company, 1954, p. 352.

that evolution proceeds at a relatively slow rate, with small steps, there may be occasional emergence of novelty in the various species of organisms through a combination of mutants. According to Muller, gene mutations occur with a high degree of randomness.³⁰ In Muller's view evolution takes place in quantum like jumps of sporadically mutating species of organisms very much like the quantum jumps of the material particles.³¹

It was Muller's main contribution that he worked out the theory of gene mutations in great detail. He demonstrated that changes could be produced in genes through X-ray radiation. According to him, each gene has the property of synthesizing materials from its surrounding and reproducing its own copy. He suggested the idea that there was some resemblance between the mode of behaviour of the ultimate units of the living phenomena and that of the ultimate particles of matter. This suggestion clearly indicates that there is perhaps a link between the living and the non-living phenomena. Muller introduced a new method of investigating the nature of the living phenomena by inducing gene mutations through artificial means which has already been mentioned before. His technique had a profound influence on his contemporaries in the field of genetics and a galaxy of geneticists appeared within a few years following the publication of Muller's researches.

It may be mentioned here that the development of the biological science took place in all its different branches during this period. The new developments in genetics had their influence on cytology. L. W. Sharp defined cytology as a branch of biology which dealt with the structural and functional organization of the protoplasm, usually in the form of cells.³² Cytology deals with the structure of the cell. The cell theory was first propounded by Schleiden and Schwann between 1838 and 1839. According to this theory all plant and animal organisms are composed of minute living units called 'cells'. According to the modern theory a cell is a complex living structure and its size may vary from

30 'The Development of the Gene Theory', *Genetics in the 20th Century*, p. 90-91.

31 'The Gene', *Proceedings of the Royal Society*, p. 14.

32 *Introduction to Cytology*, New York, McGraw Hill Book Company, 1934, p. 1.

0.1 to 0.01 mm in diameter. The living phenomena are always associated with the protoplasm which is composed of proteins, fats, carbohydrates and certain other chemical substances. However, it is not a mere haphazard conglomeration of chemical substances, but rather it is an organized system of chemical substances. The chemical substances of the protoplasm are integrated in a complex manner to form a living system. According to L. W. Sharp, the protoplasm is a system in equilibrium.³³ According to Sinnot and Dunn, protoplasm is not a homogeneous and continuous mass of substance throughout an organism, but rather it is differentiated into definite structural and functional units called 'cells'.³⁴ According to C. D. Darlington, protoplasm is an organ of behaviour, rather than a mere chemical unity.³⁵ Living systems are cellular in structure. A cell consists of a nucleus and its surrounding cytoplasm. The nucleus directs the activities of a cell. The cytoplasmic material surrounds the nucleus of a cell. It is a transparent and viscous fluid which may occupy a large portion of a cell. According to Darlington and Mather, the nucleus of a cell develops by drawing the raw materials from the cytoplasm.³⁶ It is evident, then, that there is mutual interaction between the nucleus and the cytoplasm within a cell. According to Mather, the nucleus and the cytoplasm are complementary to each other, and hence, they are inseparable in a cellular organisation.³⁷ The nucleus provides a firm foundation around which the cytoplasm is built. The genes located in the nucleus of a cell control the cytoplasmic material. However, the role of the cytoplasm in a cellular structure cannot be completely ignored. The normal development of an organism may be disturbed through any change either in the genes or in the cytoplasmic materials. Sonneborn pointed out that the cellular development was conditioned both

33 *Op. Cit.*, p. 25.

34 *Principles of Genetics*, McGraw Hill Book Company, 1950, p. 1.

35 *Recent Advances in Cytology*, London, J. & A. Churchill Ltd., 1937, p. 2.

36 *The Elements of Genetics*, London, George Allen & Unwin, 1949, p. 168.

37 'Biological Organization', *The Advancement of Science*, Vol. XII, 1953, No. 46, p. 251.

by the nucleus and by the cytoplasm.³⁸ According to R. E. Goldschmidt, the cytoplasm provides the substratum for genetic action, and all the decisive steps which take place in a cellular development are steered by the genes.³⁹ Further, in his view the cytoplasm is one of the pre-requisites for the orderly development of a cell.⁴⁰ Goldschmidt observed that the cytoplasmic materials were always under the control of the nucleus. In brief, according to Goldschmidt, the nucleus can function only in relation to the cytoplasmic materials for the latter provides an immediate internal environment with which the former can interact. However, Goldschmidt laid greater emphasis on the nuclear materials which control the development of a cell. According to H. S. Jennings, the genes interact with the cytoplasm in such a way that the former brings about changes in the latter and thereby produces new materials in it. In his view, the various cytoplasmic products of different genes interact with one another and produce new types of materials.⁴¹ This view clearly shows that new forms of living matter come into existence through interaction of different particles of living matter within a cellular structure. This suggestion seems to have a philosophical significance. It suggests that new particles of living matter may be brought into existence through the interaction of different living particles. According to Jennings, genes are not used up in the process of interaction with the cytoplasmic materials, but rather they perpetuate themselves by reproducing their exact copies. It is clear from the discussion so far that the cytoplasm forms an indispensable part of a cellular structure and that the genes steer the activities of the cell. It is, therefore, necessary to study the nature of the genes in greater detail with special reference to the views of some of the eminent geneticists.

Goldschmidt defined genetics as the study of heredity. He pointed out that genetics had played an important role in unify-

38 'Beyond the Gene—Two Years Later', *Science in Progress*, Seventh Series, 1951, p. 178.

39 'The Role of Genes in Cytoplasm', *Genetics in the 20th Century*, p. 293.

40 *Physiological Genetics*, New York, McGraw Hill Book Company, 1938, pp. 280-81.

41 *Genetics*, London, Faber & Faber, p. 182.

ing the zoological and botanical systems.⁴² Zoology studies the nature of the genes in the animal organisms, whereas botany studies the nature of the genes in the plant organisms. The science of genetics, therefore, clearly supports our thesis that there is progressive convergence of knowledge with the advancement of human learning. According to Goldschmidt, genes are hereditary units which are located in the chromosomes of a cell. Chromosomes are generally constant in a given species; in other words, they retain their 'individuality' through all the phases of cell life. They consist of two identical partners in diploid organisms and are endowed with the ability to synapse and undergo meiosis and exchange segments at definite phases of cellular cycle. They contain large strings of discrete bodies arranged in a linear order. The discrete bodies or genes within the framework of chromosomes have the property of self-duplication. Genes have the property of undergoing sudden change which is technically known as 'mutation'. The mutated genes have the property of perpetuating themselves till the time of another mutation. Genes have the chemical properties of an autocatalyst by virtue of which they reproduce themselves as one of the end products of their catalysed reactions.⁴³ They are not completely independent of one another, but rather they are joined to one another like the beads of a necklace. They are the units of a chromosome which is a giant molecule. Goldschmidt was influenced by Sturtevant's hypothesis of 'position effect.' Sturtevant suggested that the action of a gene differed according to its position within the framework of a chromosome. Goldschmidt developed Sturtevant's hypothesis of 'position effect' in his own way and proposed a new theory of genes. According to his new interpretation, it is quite possible that genes as independent units with separate functions do not exist. The theory of the existence of a gene as a unit is inferred from the phenomenon known as 'gene mutation'. According to Goldschmidt, this inference may not be valid.⁴⁴ According to him,

42 'The Impact of Genetics upon Science', *Genetics in the 20th Century*, p. 3.

43 Goldschmidt, R. B., *Physiological Genetics*, p. 282.

44 *Op. Cit.*, pp. 309-10.

it is quite possible that a gene as 'a separate unit with a specific function' does not exist. According to his assumption, the chromosome is a large chain of molecules of complex arrangement in which each point has specific chemical properties so that the activities of a cell are determined by the configuration of chemical compounds in the chain of genetic materials; and any change in the chain may upset the normal interplay of chemical reactions through which a deviation in the cellular activities may occur which is otherwise known as 'mutation'.⁴⁵ Cellular development is determined by the catalyzed reactions of chemical substances in a particular arrangement in the chain of genetic materials of a chromosome; and each step of development upon the normal appearance of the preceding events, and the latter events follow with great precision. According to M. Bergmann and C. Niemann the protein molecules of genetic materials consist of a chain of amino-acid residues linked up by peptide bonds in which each amino-acid has its own distinctive rhythm as different from those of others so that a molecular pattern is determined by the superimposition of the different rhythms of all the amino-acids.⁴⁶ Goldschmidt believed in the suggestion offered by Bergmann and Niemann and opined that a chemical analysis of genetic materials might unravel at some future date the causation of all hereditary traits. He proposed a dynamic theory of genetics which he believed would lead to ultimate success. He differentiated the dynamic theory of genetics from the classical theory. In his view, the classical theory of genetics is mainly a statistical science. The statistical interpretation of genetics tries to explain the genetic phenomena by introducing more and more genes in the form of modifier systems built up by selection. Goldschmidt believed that the classical approach to the problems of genetics was inadequate because it regarded the genetic phenomena as something static. In contrast with the classical theory Goldschmidt suggested a physiological or dynamic theory for the proper understanding of the problems of genetics. In his view, the dynamic theory of genetics tries to interpret the 'genetic phenomena in terms of

⁴⁵ *Op. Cit.*, p. 310.

⁴⁶ *Newer Biological Aspects of Protein Chemistry*, *Science*, 1937, 86.

genetic action and developmental systems including embryonic regulation and integration. However, the dynamic interpretation of genetics does not rule out the fundamental principles of the statistical theory of genetics, but rather it accepts the main principles of the latter keeping in view the dynamic aspect of a living organism. The dynamic theory of genetics leaves room for any discovery that might be made in connection with the genetic phenomena. Goldschmidt, therefore, believed that the dynamic theory of genetics would ultimately lead to success whereas the classical theory would merely lead to blind alleys.⁴⁷

Goldschmidt's approach to the problems of genetics is quite novel and his view that a gene as an independent unit does not exist seems to offer a challenge to the theories of some of the modern geneticists. He remarked that both the classical and the modern theories regarded genes as particles or corpuscles, and and the difference between the two views consisted in the fact that whereas the former theory dealt with the operational gene, the latter dealt with the hypothetical gene.⁴⁸ He suggested that the concept of 'gene' as an independent particle or corpuscle must be discarded. Goldschmidt's denial of the gene as an independent particle having a specific function cannot be refuted because there is no evidence that such a hypothetical gene exists. L. J. Stadler, therefore, remarked that Goldschmidt's view was correct when he stated that the hypothetical gene did not exist.⁴⁹ Even the cases of sudden changes in the species do not conclusively prove that mutations are caused by changes within the genes. However, in spite of the fact that Goldschmidt's position cannot be refuted on theoretical grounds quite a large number of geneticists feel reluctant to accept his position that the gene as an independent unit does not exist.

C. H. Waddington was reluctant to accept Goldschmidt's thesis that the gene as an independent unit did not exist. In his view, Goldschmidt's thesis is extremely premature. According to him, the phenomenon of 'position effect' is rather rare.

47 'Different Philosophies of Genetics', *Science*, 119, 1954, pp. 704-9.

48 *Theoretical Genetics*, Berkeley, University of California Press, 1955, pp. 187-88.

49 'The Gene', *Science*, 120, 1954, p. 814.

The phenomenon of 'position effect' has been found only in *Drosophila*. Furthermore, the theory of 'position effect' would be true only if it were assumed that the different regions of a chromosome had different properties. Waddington believed that the differences at the different points of a chromosome must have occurred in the past which is otherwise known as gene mutation. He, therefore, opined that the concept of gene could not be completely ruled out. According to Waddington, most probably each gene affects several different processes; however, in spite of the fact that each gene has the capacity for different types of reactions each one is associated with a specific type of reaction.⁵⁰ Waddington accepted Caspersson's thesis that nucleic acid is in some way connected with the stability of genes. He also suggested that the nucleic acid played an important part in the process of gene duplication.⁵¹ He further maintained that gene products were enzymes and, consequently, the latter were of the same chemical composition as the former. In other words, both genes and gene products are of the nature of proteins.⁵² According to Waddington, genes mutate spontaneously, that is, without any apparent causes. The evolutionary process is closely connected with the phenomenon of gene mutations. There are certain evidences which go to prove that evolution actually took place in the universe. The palaeontological evidences give sufficient indication to the fact that evolution is a continuous process with occasional changes in the species of living organisms.⁵³ There are ample instances in Nature which bear testimony to the fact that both continuous and discontinuous processes occur in the evolutionary process.

T. Dobzhansky recognized the existence of a gene as a particle of molecular dimensions. He defined genetics as the physiology of inheritance and variations. Genes influence the development of an organism through physiological and ultimately through chemical processes. The chemical reactions that take place within an organism are controlled by genes. Genes are

⁵⁰ *An Introduction to Modern Genetics*, London. George Allen & Unwin, 1950, p. 157.

⁵¹ *Op. Cit.*, p. 400.

⁵² *Op. Cit.*, p. 401.

⁵³ *Op. Cit.*, p. 241.

chemically most active. They are the most stable elements of a cellular structure. They not only duplicate themselves and transmit themselves to all the cells of a developing body, but they also transmit themselves to their offspring from generation to generation. Thus, genes perpetuate themselves from generation to generation and provide all possible mechanisms to organisms to withstand the environmental shocks. Organisms can even alter the environment in certain cases. Continuity of the living forms in the world is due to the existence of self-reproducing materials in living organisms. According to Dobzhansky, the totality of genes of an individual or of a particular species constitutes a genotype. The genotype can be transmitted without producing any change in the offspring. The genotype exerts 'pressure' on its environment and tries to alter the environment. Individuals of a certain species can subsist not only in one specific type of environment, but rather in a variety of environments. Whereas the genotype of a species is relatively stable the phenotype of its constituent members varies from individual to individual and even in the same individual from time to time. A genotype has the potentiality of giving rise to a multitude of phenotypes. A genotype is the product of a long process of evolutionary development. Dobzhansky defined evolution as a change in the genotype of a population.⁵⁴ According to him, evolution is the study of the dynamics of life. Survival or extinction of a species is determined by genes. Slight modifications in the phenotype brought about by the environmental changes do not themselves constitute evolution, but evolution is marked by some sort of alteration in the genotype. However, it must be noted that the phenotypes are able to adapt themselves to certain types of environments and are unfit for others. Dobzhansky observed that gene mutations were haphazard in the sense that they took place regardless of the needs of an organism at a given time and place; and that consequently mutations were generally harmful for the survival of the mutant organisms. However, the nature of mutations and the frequency of mutations are not absolutely indeterminate; but rather they are determined by the

⁵⁴ *Genetics and the Origin of Species*, New York, Columbia University Press, 1951, p. 22.

structure of the genes.⁵⁵ According to Dobzhansky, Nature selects those species in which mutations are comparatively low. However, from another point of view rapid mutability of a species is necessary for preserving its evolutionary plasticity.⁵⁶ Mutations enhance the adaptive possibilities of a species. Dobzhansky characterized the evolutionary process as 'opportunistic' in the sense that natural selection favours those mutants which are useful at a given time regardless of their future value. According to Dobzhansky, then, evolution is non-teleological.⁵⁷ However, when the environment changes some of the previous variants become advantageous and are preserved.⁵⁸ However, it is not a general principle that all those variants which are rejected in certain environments would be selected in some others. It has been sometimes charged that the modern theory of evolution lays undue emphasis upon chance mutation. Dobzhansky replied to this objection by saying that this misunderstanding was due to failure to grasp the real implication of the term 'chance'. According to him, chance mutation does not mean absolute randomness in the process of transformation. For instance, perfect eyes cannot develop in a certain species which had previously no trace of the organ of vision. The appearance of the eye in a species of living form is the result of evolutionary development. *Amphioxus*, for instance, has no eyes, but it perceives light with the help of certain pigment cells in the brain. Perhaps the eyes of the present species developed from pigment cells in the brain in course of millions of years.⁵⁹ In brief, gene mutations are not entirely indeterminate, but rather they are determined by the nature of the genetic material on which modifications are brought about through interaction with the environment. Mutations, then, take place by 'chance' in the sense that alterations occur regardless of their survival value at a given time and place.

Julian Huxley tried to work out a theory of evolution systematically and elaborately. He made an attempt to revive

⁵⁵ *Op. Cit.*, p. 60.

⁵⁶ *Op. Cit.*, p. 73.

⁵⁷ *Op. Cit.*, p. 74.

⁵⁸ 'The Genetic Basis of Evolution', *Scientific American Reader*, 1953, p. 298.

⁵⁹ *Op. Cit.*, pp. 307-8.

the Darwinian theory of evolution and tried to correlate it with the principles of modern genetics. He observed that the gene-complex consisted of unit particles and the way in which the Darwinian principle of Natural Selection operated depended upon the nature of genetic mechanism.⁶⁰ According to him, the evolutionary changes are almost gradual and the principle of Natural Selection operates in such a manner that it produces results which are of immediate biological utility to the living organisms. However, since the principle of Natural Selection is non-teleological in its nature the way in which it works is blind and automatic. It is a matter of pure chance that certain species of living organisms are able to adapt themselves to certain environments. The evolutionary process, then, is not the result of any plan or design. According to him, the principle of Natural Selection is the only effective and inevitable agency of evolution.⁶¹ Evolution may be regarded in a sense as the process of utilization of the earth's resources by living organisms. In other words, there is wide distribution of living organisms over the earth's surface which exploit the available materials in all possible ways. Huxley used the expression 'adaptive radiation' for the process of distribution of the living species on the various geographical regions of the planet earth.⁶² The various species of living organisms invade the different regions of the planet earth and utilize as much material as possible from there. In this way certain species invade the land, others the oceans and rivers and others the air and colonize there through progressive adaptation. Adaptive radiation is the result of Natural Selection. Huxley severely objected to the use of the term 'progressive' with reference to the evolutionary process. He also objected to the use of the terms 'higher' and 'lower' with reference to the various living species. He argued that if both an insect and a lion were well-adapted to their environments and if both survived there was no point in regarding one of the organisms as 'higher' than the other. Likewise the term 'progress' is not suitably applicable

60 'The Evolutionary Process', *Evolution as a Process*, London, George Allen & Unwin, 1954, p. 2.

61 *Evolution in Action*, London, Chatto & Windus, 1953, p. 40.

62 *Evolution: The Modern Synthesis*, p. 493.

to the evolutionary process. For if there were any progress in the evolutionary process, how could the lower organisms survive side by side with the higher organisms?⁶³ Huxley, therefore, concluded teleology in the evolutionary process was apparent only, and that the principle of Natural Selection was blind and unconscious. Furthermore, improvement is not a universal feature of evolutionary process, for the lower forms of living organisms manage to live alongside the higher ones which implies that the conception of general advance is judged with reference to the highest level of complexity and efficacy rather than with reference to the average. Therefore, according to Huxley, the improvement in the form of complexity and efficacy is restricted and general advance is often limited.

So far the views of those biologists were discussed who recognized the existence of genes. Amongst the modern geneticists those who opposed the theory of genes did so for certain definite reasons and the views that they put forward to replace the theory of genes were more of the nature of suggestions for further investigation than of the nature of definite solutions. The theory of living phenomena advanced by the Russian biologists is diametrically opposed to the theories of genetics advanced by the Western biologists. The Russian biologists categorically denied the existence of genes. Michurin denied the existence of genes and pointed out that the genetic character of the plant species could be modified by changing the environment. He found that any change in the breed of a species was due to the influence of the environment on the organism. According to him, the breeds of plants differ considerably in spite of the fact that their seeds exhibit very little difference and their embryos show still less difference. In brief, according to Michurin, all modifications in the different breeds of plants are due to changes of the environment, and not at all due to the influence of the embryonic materials. T. D. Lysenko worked on the same lines as suggested by Michurin and further elaborated his doctrine. According to Lysenko, the genetic constitution of a plant is not located in any special hereditary organ, such as the genes or

⁶³ *Op. Cit.*, pp. 557-8.

the chromosomes, but rather it is distributed throughout the organism. The particles that are found in the nuclei of the cells are not genes. Heredity does not depend upon the function of the genes, but on the development of the cells which transform themselves into an organism. In Lysenko's view heredity is the property of a living organism to require definite conditions for its development and react in certain ways to various conditions.⁶⁴ In other words, heredity means the nature of a living organism, Lysenko claimed that he could alter the heredity of a particular living species through various kinds of treatment. For instance, the heredity of certain breeds of wheat could be changed by altering the environmental conditions. Lysenko used the terms 'nature' and 'heredity' in the same sense. For instance, a lamb develops into a sheep and a calf into a cow according to their respective natures by assimilating the same hay.⁶⁵ In brief, each organism assimilates materials from the environment and grows to maturity in accordance with its specific nature or heredity. It selects from the environment only those conditions that it needs for its development and survival. Sometimes an organism is unable to get suitable materials that it needs from its particular environment and is, therefore, forced to assimilate certain materials which do not accord with its nature as a result of which such organisms change. According to Lysenko a change is brought about in the nature of an organism through a change in the mode of assimilation.⁶⁶ The environmental conditions contain different materials which are assimilated by the developing organisms. The environment plays a major part in changing the species of living organisms.

Olga Lepeshinskaya, a Soviet scientist, also denied the existence of genes, and maintained that life had pre-cellular existence. According to her, the protoplasm of an egg is capable of forming into cells and generating life even after the embryo is taken out of it or destroyed. For instance, if a hydra is completely crushed and its cells are destroyed, even than nuclei are formed into its protoplasm and thus giving rise to new

64 *Agrobiology*, Moscow, Foreign Publishing House, 1954, p. 390.

65 *Op. Cit.*, p. 393.

66 *Op. Cit.*, p. 395.

living cells. It follows, therefore, that structureless organic matter is synthesized into living cells. Lepeshinskaya, therefore, opined that a cell was not only reproduced by a pre-existing cell, but rather it could be formed out of non-living cellular matter. Her theory ruled out the classical view that the protoplasm of a cell was a protein substance serving merely as a nutrient for the developing embryo. Alexander Popovsky observed that according to Lepeshinskaya a cell alone was not capable of performing vital functions, but rather the vital functions could be performed even by the protein matter surrounding the nucleus of a cell; and that consequently a cell was produced not only through cell division but also through the synthesis of protoplasmic materials of a cellular structure.⁶⁷ Thus, Lepeshinskaya's view ruled out the classical theories of Rudolf Virchow and Weismann according to which living cells alone could reproduce themselves, and not the protoplasmic matter surrounding the cells. In sum, she made an attempt to disprove the modern genetic theory according to which reproduction is determined mainly through the steering activity of the nuclear materials of the cells.

The theories of the Russian biologists have been severely criticised by most of the modern biologists. C. D. Darlington remarked that some of the hybridization experiments with certain plant species that were performed by the Michurinists could not be repeated outside the Soviet Russia, which evidently meant that they were deliberately cooked up stories.⁶⁸ Julian Huxley remarked that the theories of Michurin and Lysenko were inconsistent with facts, and that consequently they were invalid.⁶⁹ Lysenko's use of the expression 'nature' signifying heredity is rather vague for it falls short of scientific formalization. It has been established beyond doubt that the genetic materials of the cellular nucleus steer the developmental processes and determine the hereditary factors. The denial of the genetic materials as the determinants of heredity by the Soviet biologists seems to be unwarranted. Moreover, the Soviet biologists seem to overem-

⁶⁷ *Voks Bulletin*, No. 66, 1951, p. 50.

⁶⁸ *Facts of Life*, London. George Allen & Unwin, 1953, p. 229.

⁶⁹ *Evolution in Action*, p. 40.

phasize the influence of the environment in bringing about modifications in the various species of living organisms. It is true that certain variants survive in the changed environments while most of the variants perish. The emergence of the various new species of living organisms is not due to the influence of the environment alone, but also due to gene mutations.

So far the different theories of the living phenomena have been discussed at some length. It was found in the course of our discussion that most of the scientists were agreed on the point that the genetic materials of the cellular nuclei were the ultimate elements which performed the most complicated vital functions. The Soviet biologists opposed the modern genetic theory because the latter view did not conform suitably with their basic philosophy. However, the theories of the Soviet biologists were severely criticised by most of the outstanding biologists who held that they were untenable because most of the experiments that the Soviet scientists claimed to have performed successfully could not be repeated in spite of the best possible efforts outside the Soviet Russia.

In the following few pages an attempt will be made to show that there is some connection between biology and physics and still greater connection between biology and chemistry, and thereby we shall try to establish a part of our thesis that there is convergence of knowledge.

A number of eminent scientists made an attempt to show that there is some connection between biology and physics. Boltzman suggested that struggle for existence was not merely struggle for essential food materials which is present in sufficient quantities on the surface of the planet earth, but also there was struggle for *free energy* which is mainly available from sunlight. C. Sheard also maintained that all vital processes were accompanied by electrical phenomena.⁷⁰ The process of photosynthesis is a complex process by which the solar energy is utilized by the plants. The photosynthetic process is enhanced by certain enzymatic reactions which go on within the organism. The phenomenon of photosynthesis is one of the chief methods by

70 *Life-Giving Light*, The Williams & Williams & Co., 1933, p. 169.

which a living organism counteracts the 'running down' of the energy of the planet earth.⁷¹ Jerome Alexander also believed that there was an intimate connection between biology and physics. According to him, the biocatalysts, which perform the major vital functions, arise out of the assemblage of smaller material units like atoms, molecules, colloid particles and the like. He suggested the idea that if a gene absorbed a minute particle, such as an atom, an ion, or a molecule, and if it was able to duplicate itself, then the effect thus produced was called a 'gene mutation'.⁷² According to this view gene mutations are probably due to modified catalyst fields. Werner Heisenberg pointed out that the laws of physics and chemistry were not only applicable to non-living matter but also to living matter. He believed that if a certain change took place at the atomic level, such as the release of a single chemical link in a chromosome of a cell nucleus, the mode of the future development of an organism could be radically changed.⁷³ In such cases the statistical laws of quantum physics are applicable for the prediction of the future behaviour of the living organisms. Heisenberg did not work out this theory at length, but he merely threw passing suggestions for further investigation.

Erwin Schrödinger examined the nature of living phenomena from the standpoint of physics, and tried to work out his theory in some detail. According to him, the chromosome fibre, which is the most essential part of a living cell might be called an *aperiodic crystal*.⁷⁴ It is the material carrier of life. According to Schrödinger, the organization of life is maintained by exacting 'order' from the environment. The living beings maintain their stable and organized existence by preserving their orderly laws of behaviour by counteracting the tendency of going over from order to disorder.⁷⁵ A living organism avoids decay through assimilation of food which is technically known as 'metabolism'. According to Schrödinger, every process, event or happening of the physical world is characterized by increase in entropy; and

71 *Op. Cit.*, p. 116.

72 *Life: Its Nature and Origin*, Reinhold Publishing Corp., 1948, p. 196.

73 *Philosophic Problems of Nuclear Science*, p. 91.

74 *What is Life*, p. 3.

75 *Op. Cit.*, p. 69.

since living organisms are also a part of the physical world they are also subject to positive entropy or gradual process of decay which ultimately leads to maximum entropy or death. Living organisms are able to ward off decay and death under normal conditions by extracting 'negative entropy' from the environment. This takes place through assimilation of nutritive substances, such as food, drink etc., by the living organisms. According to Schrödinger, life feeds on negative entropy.⁷⁶ In other words, it draws 'negative entropy' from the environment in order to compensate the positive entropy increase within the organism and thereby it is able to keep the positive entropy at a fairly low level. The negative entropy is the sign of order whereas the positive entropy is the sign of disorder. A living organism is thus, able to maintain its stability by extracting orderliness from the environment. There is extra-ordinary regularity and order in the behaviour of a living organism. The orderly behaviour of a living organism is regulated by a group of atoms within a living cell which are technically known as 'genes'. Large-scale changes take place within an organism if somehow only a few atoms are dissociated from the group of 'governing atoms' of a living cell which are technically known as 'gene mutations'. This power of sucking orderliness from the environment pertains exclusively to the living organisms, and the orderly behaviour of an organism is regulated by chromosome molecules. Chromosome molecules represent a most ordered atomic association which may be called 'aperiodic solids'. Aperiodic solids have the property of functioning in a orderly fashion. An organism makes a disposal of its internal disorderliness or positive entropy in the form of body heat.

J. D. Bernal also maintained that living phenomena can be explained from the standpoint of physics. According to him, clay, sand, quartz etc., have certain properties of living beings. Proteins are the necessary basis of all living phenomena. Living organisms are formed out of complex molecules chemically reacting among themselves in some liquid form. Most of the living organisms from the lowest bacteria to man are composed

76 *Op. Cit.*, p. 74.

of chemical molecules containing between four and forty atoms in each.⁷⁷ According to Bernal, the chemical evolution of living organisms can be best understood through a conjoint study of physics and biochemistry. In his view, the quantum energy changes in chemical reactions have a stable process of conversion which is called energy of life.⁷⁸ The first step through which living phenomena emerge out of non-living was essentially a physico-chemical step.⁷⁹ The early history of life was determined by the interaction of molecules. The greatest achievement of the earliest form of life was the building of complex protein molecules which formed the basis of the physical and chemical activities of an organism. A protein molecule has such an atomic pattern that it has the property of acting as a firm mould for repeatable chemical processes. It has the property of carrying electric charges. It has also the property of reacting to the electrical charges in the environment which serves as the physical basis for sensation and movement.⁸⁰ In brief, according to Bernal, the origin and the nature of living phenomena can be satisfactorily understood through a proper study of physics and biochemistry.

It is quite evident from a brief discussion of the views of Schrödinger, Bernal and others that a living organism has a physical basis, and hence, the connection between physics and biology is rather close. The laws of physics and chemistry which apply to non-living matter also apply to living matter because the latter forms part of the physical universe. For instance, a simple rearrangement of an atom in a genetic material may bring about radical changes in the structure and function of an organism. Timofejeff, Delbrück and Zimmer pointed out on the basis of their experiments that sudden changes in the gene structure were comparable to quantum-mechanical elementary acts. Weizsäcker and Jüls observed that the uncertain nature of gene mutations was comparable to the quantum mechanical uncertainty of the atomic phenomena. He pointed out another instance in which

77. *The Physical Basis of Life*, 1951, p. 38.

78. *Op. Cit.*, p. 28.

79. Bernal, J. D., *The Freedom of Necessity*. London, Kegan Paul, 1949, p. 34.

80. *Op. Cit.*, p. 34.

he showed that there was no sharp line of demarcation between the living and the non-living. A virus, for instance, has the properties of non-living matter, such as, a fixed molecular weight and crystallisability, on the one hand, and the properties of living matter, such as, assimilation, reproduction etc., on the other. Thus, a virus has the properties of living matter as well as non-living matter.⁸¹ There is a new branch of science now-a-days called biophysics which deals with some of the most complicated problems which interlink biology and physics.

An attempt will be made in the following few pages to show that a living organism has not only a physical basis, but it has also a chemical aspect. A series of experiments have been done on the chemical aspect of the living phenomena and some of the most startling results have been obtained. A new science has developed out of these researches known as biochemistry which has thrown sufficient light on the nature of the living phenomena during the past few decades. In the following few pages the chemical aspect of the living phenomena will be discussed briefly.

G. W. Beadle tried to give a thorough chemical analysis of genes. According to him, genes, which are the units of inheritance, are arranged in a linear order in minute filaments within chromosomes. In his view, the inference regarding the existence of genes is based upon three grounds, viz., the facts of heredity, the facts of evolution and speculative considerations regarding the origin of life.⁸² Genes affect the different traits of a living organism. Some of the genes produce only minor effects and others produce major effects on organisms.⁸³ They constitute the integral parts of all living organisms and direct as well as participate in many chemical reactions that take place within an organism. They are composed of chemical substances. They duplicate themselves in the presence of large number of chemical reactions. Mirskey and Pollister found out that chromosomes

81 *Contemporary Physics*, London, Hutchison's Scientific and Technical Publications, 1957, p. 141.

82 'Genes and Biological Enigmas', *Science in Progress*, Sixth Series, 1949, p. 185.

83 'Genes and the Chemistry of the Organism', *Science in Progress*, Fifth Series, 1947, pp. 192-3.

were largely composed of nucleoprotein. Beadle believed that presumably chromosomes contained a large proportion of non-genetic materials. Consequently, he thought that genes differed chemically from the bulk of chromosome materials.⁸⁴ He further found that both genes and viruses were composed of nucleoproteins; hence, chemically they were of similar nature.⁸⁵ He observed that genes contained nucleic acid combined with nucleoprotein.⁸⁶ According to him, the nucleoproteins are built out of amino acids. Amino acids are the building blocks of proteins. An organism assimilates the essential amino acids through nutritive substances drawn mainly through vegetable and animal organisms. The amino acids of the vegetable and animal organisms taken in the form of food are broken within the organism into their component parts and reconstructed again into the specific type of proteins of the organism absorbing the materials. Beadle suggested the gene-enzyme hypothesis according to which genes control the chemical reactions with the aid of enzymes. Enzymes are organic catalysts which accelerate chemical reactions within an organism. They are also of the nature of proteins or at least contain protein components. Beadle observed that gene mutations interfered with the normal synthesis of organic substances. His gene-enzyme hypothesis suggested the idea that genes control the metabolic processes. Enzymes are intermediate between genes and chemical reactions. Beadle's one-gene-one-enzyme theory, therefore, suggests that one gene is concerned primarily with one enzyme.⁸⁷ His hypothesis of the one-gene-one-enzyme was based on his experiments on *Neurospora*.

Dobzhansky did not quite agree with Beadle's thesis that each gene had a specific enzyme which catalysed a specific chemical reaction. He disagreed with Beadle on the ground that there was no sufficient evidence in favour of this hypothesis. He pointed out that the postulated enzymes produced by genes were rarely identified.⁸⁸ It need not concern us here whether each

84 *Op. Cit.*, p. 193.

85 'Genes and Biological Enigmas', *Science in Progress*, p. 206.

86 *Op. Cit.*, p. 206.

87 'Chemical Genetics', *Genetics in the 20th Century*, p. 228.

88 *Genetics and the Origin of Species*, p. 13.

gene produces its specific enzyme. It will be ascertained with certainty by further investigation about the exact nature of the relation between genes and enzymes. However, it may be admitted here that genes or gene products mainly act as biocatalysts. We may conclude, therefore, that the phenomenon of catalysis is an important process through which life sustains itself. Moreover, it seems that further chemical analysis of the living phenomena will throw some more light on the nature of living phenomena. Sir Charles Sherrington described a living cell as a chemical unity in which all the vital activities took place. According to him, a cell is not a homogeneous solution of chemical substances, but rather the various molecules retain their identity, especially the protein molecules. The various catalysts in a cell act in a very organized manner in which each performs its specific function at a given time, and when the harmony and co-ordination between the various constituent catalysts is lost there is death.⁸⁹ This type of chemical explanation of the living phenomena has been given by many other geneticists besides Beadle and Sherrington.

So far some of the most essential features of the living phenomena have been discussed briefly. The physiological, physical and chemical aspects of living phenomena were discussed in particular. It was noted in connection with this discussion that great achievements have taken place in the recent years in the fields of physiology and biochemistry. Compared to the remarkable achievements in physiology and biochemistry the positive results obtained in the field of biophysics are rather meagre, and it is hoped that with the development of this new science the gulf between physics and biology will be narrowed and some of the laws which link the living and the non-living matter will be discovered. Let it be hoped, therefore, that with the interlinking of the various sciences some of the important features of reality will gradually come into light with the advancement of knowledge. However, it is only an ideal for all scientific researches in connection with the investigation of the first principles. An attempt will be made now to summarize some

⁸⁹ *Man on His Nature*, 1951, p. 71.

of the important characteristics of living phenomena which have some philosophical consequence.

It was noted in connection with the discussion of the nature of living phenomena that complexity is one of the most important characteristics of living systems. A cell, which is the smallest living system, is an integrated structure of different components in which each unit performs its specific function in co-ordination with other units. Internal complexity is, therefore, one of the most important characteristics of a living system. As a matter of fact, complexity of structure is one of the most important characteristics by which the living phenomena can be distinguished from the non-living. Furthermore, living phenomena have also the property of maintaining constancy of internal environment in spite of changes in the external environment. This property of maintaining internal environment on the part of living organisms is known as 'homeostasis'.⁹⁰

Since complexity of structure is one of the important marks of the living phenomena the colloidal nature of the living systems may be briefly discussed here. Wolfgang Ostwald maintained that living phenomena were instances of colloidal systems. According to him, all life processes take place in colloidal systems which help the integration of biological processes.⁹¹ In fact, living phenomena originated in a colloidal state. A colloid is a mixture of different forms of matter, particularly, solids and liquids. It is a heterogeneous system which is made up of different types of material substances. H. B. Bull pointed out that a 'colloid' was a state of matter rather than a kind of matter.⁹² He observed that if proper technique was known any form of matter could be brought into a colloidal state. Colloids carry electrical charges and have a natural tendency to form into bigger molecules. They have the property of adsorption because they are semi-permeable in their nature. It has now been established beyond doubt that protoplasm is a colloidal system; and as a matter of fact the entire organism may be described as an organized whole of integrated colloidal systems. Proto-

⁹⁰ Fruton & Simmonds, *General Biochemistry*, p. 805.

⁹¹ *Theoretical and Applied Colloid Chemistry*, p. 155.

⁹² *Physical Biochemistry*, New York, John Wiley & Sons, 1943, p. 224.

plasm is a colloidal mixture of salts, water, proteins, enzymes etc. Proteins predominate in the colloidal mixture of protoplasm. In fact, protein is the most essential constituent of living organisms. It may now be concluded that the integration of chemical substances into colloidal structures paves the way for the appearance of living phenomena. Living phenomena, therefore, seem to be nothing but the attainment of certain specific structures through certain unique modes of chemical integration. Living phenomena are, therefore, defined in terms of their behaviour pattern, such as, assimilation, growth, reproduction etc. It is obvious, then, that any structure which has the properties of assimilation, growth, reproduction etc. may be called a living phenomenon. A structure, on the other hand, which does not have the properties of assimilation, growth, reproduction etc., may be called a non-living phenomenon. A virus, for instance, has the properties of both living and non-living phenomena. It is obvious, then, that the living phenomena are not basically or fundamentally different from the non-living phenomena; but rather when non-living phenomena attain certain types of structure through unique modes of chemical integration they attain the properties of living phenomena. The living phenomena differ from the non-living mainly on the basis of the differences in their behaviour. But so far as the ultimate constituents of the living and the non-living phenomena are concerned there is perhaps no difference between the two. The definition of the living phenomena differs from that of the non-living mainly on the basis of the respective functions of the two. It may, therefore, be concluded that the living phenomena differ from the non-living mainly on the basis of functional definition.

Another important characteristic of living phenomena is that they are mainly composed of proteins. According to E. Baldwin, proteins from an essential aspect of living organisms, hence the former constitute an indispensable article of food.⁹³ It has been found by feeding experiments that laboratory animals require certain essential amino-acids for the performance of physiological functions and for normal growth. Emaciation and

⁹³ *Dynamic Aspects of Biochemistry*, Cambridge University Press, 1953, p. 255.

eventual death may take place through lack of sufficient intake of proteins through food materials. It is observed that sometimes before death there is excretion of nitrogen in large quantities which is an index of the fact that the proteins of the organism itself are broken down in the process of organic functions. According to Baldwin, death is heralded by a sharp rise in the rate of nitrogenous excretion which is known as 'pre-mortal rise'.⁹⁴ During the stage of 'pre-mortal rise' an organism is left merely with its own portion tissues which it uses up for the performance of its normal physiological functions. Since such an organism uses up its own reserve of proteins in the process of performing its normal physiological functions there begins a large scale degradation of the body proteins due to which there is profuse excretion of nitrogen. It is necessary, therefore, to supply amino-acids to the decaying body in the form of protein food for the maintenance and normal growth of the body. Baldwin observed that life could be sustained through adequate nitrogen balance. A constant supply of proteins is necessary for the normal working of an organism. Proteins cannot be ordinarily stored in an organism except during infancy, pregnancy, convalescence etc. From the chemical point of view proteins are composed of amino-acids. Harrow and Mazur observed that proteins yield amino-acids on hydrolysis.⁹⁵ There are different types of proteins and their differences are determined by the number of amino-acids and their mode of arrangement in each particular type of protein. In other words, amino-acids are the building blocks of proteins; and the nature of each type of protein is determined by the number, kind and arrangement of amino-acids. In this way the different modes of arrangement of amino-acids give rise to the different types of proteins, such as, the proteins of the muscles, skin, hormones, genes, etc. The biological function of each protein is determined by the specific mode of arrangement of the amino-acids. Theoretically speaking infinite number of proteins can be built through different permutations and combinations of amino-acids. According to J. Needham,

94. *Op. Cit.*, p. 258.

95. *Text-book of Biochemistry*, Philadelphia, W. B. Saunders & Co., 1954, p. 45.

proteins have a dynamic structure.⁹⁶ Protein molecules are in a state of constant flow and flux. They participate in the construction of cellular structures and also in metabolism. Many organisms have the property of using proteins different from their own by breaking down such proteins into their constituent amino-acids and then resynthesizing them into their own characteristic proteins. Enzymes are the most important proteins which are responsible for the acceleration and direction of an organism's innumerable chemical reactions.⁹⁷ The protein splitting enzymes have the property of joining two amino-acids together to form a peptide bond under certain conditions. In sum, it may be now concluded that proteins constitute the most important constituents of living phenomena. Proteins are chemically analysable into amino-acids, but the amino-acids themselves are not proteins. This fact reaffirms our thesis stated already that when the parts synthesize themselves into integrated wholes the latter come to possess new properties which were not possessed by the parts in their state of isolation from one another. It may be said, then, that non-living phenomena acquire new functions when they synthesize themselves through unique integration into living phenomena.

The nucleoproteins are the most important proteins out of the different types of proteins in a living organism. Nucleoproteins are the essential constituents of cell nuclei; they are conjugate proteins formed by the union of nucleic acid with protamine or histone. It has been found by chemical analysis that desoxyribo-nucleic acid, ribonucleic acid, histone and non-histone proteins are the major components of nucleoproteins.⁹⁸ It has also been found through recent cyto-chemical researches that nucleic acids take part in the synthesis of proteins. It is found that there is abundance of ribonucleic acid where protein synthesis is most intense.⁹⁹ According to Caspersson, the nucleus

96 *Biochemistry and Morphogenesis*, Cambridge University Press, 1950, p. 676.

97 Fruton, J. S., 'Proteins', *Scientific American Reader*, 1953, p. 231.

98 Swift, H., 'Quantitative Aspects of Nuclear Nucleoproteins', *International Review of Cytology*, Ed. Bowme, G. H., and Danielli, J. F., New York, Academic Press, 1953, Vol. II, p. 31.

99 Brachet, J., *Chemical Embryology*, New York, Inter-science Publishers, 1950, p. 230.

of a cell and particularly a chromatine is the most important centre for protein synthesis for there the nucleic acids take part in the processes leading to the synthesis of cellular proteins.¹⁰⁰ He further believed that nucleic acids were necessary for the stability and reproduction of genes and all other self-reproducing proteins.¹⁰¹ Brachet pointed out that the nucleic acids were responsible for growth and other synthetic processes that took place within an organism.¹⁰² It has now been established beyond doubt that nucleic acids are invariably associated with protein formation.

Another important mark of living phenomena consists in the fact that they are invariably associated with enzymes. Enzymes are one of the most important proteins of living organisms. Enzymes are ferments. The term 'ferment' which is derived from the Latin word *fermentum* has been in use for many centuries. Kuhne first introduced the term 'enzyme' in 1878 which literally meant 'in yeast'. J. B. Sumner found in 1926 that enzymes were of the nature of proteins. Enzymes are catalysts of biological origin having high molecular weight. J. B. Sumner and K. Myrback defined life as an orderly working of enzymes.¹⁰³ Enzymes act with great co-ordination in a living organism. But during the diseased condition of an organism the co-ordination of enzymes is upset. It is evident, then, that enzymes are instruments with the help of which an organism carries on its physiological processes. Enzymes are organic catalysts. They accelerate chemical reactions within an organism without themselves entering into the reactions. Protein synthesis takes place under the influence of enzymes in an organism. Enzymes have a high degree of specificity. Each enzyme has the property of inducing a limited number of chemical reactions and even in some cases one reaction only.¹⁰⁴ Enzymes are complex organic catalysts which have the property of acting independently of the

100 Caspersson, T. O., *Cell, Growth and Cell Function*, New York, W. W. Norton and Co., 1950, p. 98.

101 Schultz, J. and Caspersson, T. O., 'Nucleic Acids in Drosophila Eggs and Y-chromosome Effects', *Nature*, 63, 1948, p. 66.

102 *Chemical Embryology*, p. 243.

103 *The Enzymes*, New York, Academic Press, 1950, Vol. I, Part I, p. 1.

104 Baldwin, E., *Dynamic Aspects of Biochemistry*, p. 9.

cells that produce them. They unite with their substrates or substances upon which their catalytic influence is exerted. An enzyme can combine with a very limited number of substrates and very often with only one and activities the latter. The fact that each enzyme has a high degree of specificity hints at the principle that there is greater and greater emphasis upon individuality in course of the evolutionary process. The specificity of enzymes is greater in complex organisms than in simpler forms of organisms. This fact may be cited as an example to our thesis that there is greater and greater emphasis upon individuality in the course of the evolutionary process. It is true that the individuality of an enzyme is not as well defined as that of a human personality, but the fact remains, that the specificity of an enzyme is the symbol of incipient individuality. In other words, the teleological principle in an enzyme is more well-defined than in a simpler form of molecule. This comparison will be clearly understood if the behaviours of an enzyme and a simple molecule are observed carefully. It will be found through careful observation that an enzyme performs more complicated actions than a simple molecule. In connection with the same context the theory of one-gene-one-enzyme may be mentioned once again. According to the one-gene-one-enzyme hypothesis each gene synthesizes one particular type of enzyme which catalyses certain specific type of reactions. J. B. S. Haldane was partly responsible for suggesting the idea that genes produce enzymes of particular types.¹⁰⁵ Genes have most highly complicated functions, for instance, the same gene may produce a substance of which there is shortage in an organism and destroy it if it is in excess.¹⁰⁶ Haldane suggested that one of the main functions of genes consisted in the synthesis of protein molecules particularly of the enzymes with the help of which the physiological functions were performed.¹⁰⁷ It may be, therefore, said that genes steer the physiological process of living phenomena with the help of well-organized system of enzymes.

105 *The Biochemistry of Genetics*, London, George Allen and Unwin, 1956, p. 15.

106 *Op. Cit.*, p. 115.

107 *Op. Cit.*, p. 121.

Living phenomena have another important characteristic, *viz.*, internal organization. It may be stated here that some degree of organization is found in all levels of existence, but it is found in a quite well-developed form in living phenomena. The internal organization of a living cell is more developed than the organization of an atomic system. The various parts of an organism are inter-dependent and they co-operate amongst themselves for performing various physiological functions. J. B. S. Haldane pointed out that a higher animal had many more types of cells than a higher plant. According to him, the specificity of cells is the pre-requisite for morphological complexity.¹⁰⁸ It may be, therefore, said that the greater is the complexity of organization in an organism the greater are the potentialities of the latter for performing various physiological functions. An organism, therefore, may be described as a functioning whole. It is a dynamic structure which functions as an organized whole. The various physiological processes are well-integrated for the normal working of a whole organism. It maintains its internal order through continuous adaptation to the environmental conditions. It exhibits a high degree of regularity and orderliness in performing its physiological functions and adjusting itself to the environmental conditions. The working of an embryo may be cited as a suitable example for illustrating the organized activity of an organism. It is found that certain parts of an embryo emit certain chemical substances which induce differentiations in certain areas of a developing embryo. The various parts of an embryo which induce differentiations are known as 'organizers'. Sometimes these chemo-differentiated areas of an embryo are also known as *fields*. The developmental activity is at its highest at a particular point of a field. Highly complex physical and chemical changes take place within each organizer of a growing embryo. The organizers initiate developmental processes in each growing embryo. It is, therefore, quite clear that an organism functions as an organized whole.

There is another characteristic of living organisms which deserves special attention. It was just stated that living orga-

108 *Op. Cit.*, p. 120.

nisms behaved in an organized fashion. But it must be mentioned here that the behaviour of living organisms do not necessarily conform to rigid deterministic laws. There is an element of disorderliness in the behaviour of living organism. Evidently, here the reference is made particularly to the phenomenon of gene mutations. The phenomenon of gene mutations gives a clear indication of the fact that living organisms do not always behave according to deterministic laws, but occasionally they behave in an indeterministic fashion. Gene mutations involve an element of chance. They take place spontaneously without any prior plan or purpose on the part of the mutating organism. Some of the mutants which are suitable for a particular environment are selected and others which are not suited for the latter are destroyed. It is also found that evolution is not a flat and a continuous process, but rather its movement takes place by sudden jumps. The phenomena of gene mutations and evolutionary process have some affinity with the equantum jumps of material phenomena. Discontinuity seems to be the common feature of the living as well as the non-living phenomena. The discontinuous feature of the living and the non-living phenomena hints at two important facts, *viz.*, that reality is differentiated and structured and that the indeterministic laws are at the heart of Nature. The discontinuous feature of the living and the non-living phenomena also faintly hints at creativity that is at the heart of Nature, —a type of creativity which is found specifically in a creative personality. The energy quanta emitted by an atomic system appear like vague creative acts of an entity of which the acquisition of a creative personality appears like a hazy and far off goal. Consequently, the creative acts of an atomic system are apparently aimless since the teleological principle of the latter is not adequately developed. Nevertheless, the indeterministic mode of behaviour of an atomic system hints at the fact that an incipient personality is at work. The teleological principle which is in a hazy and undeveloped form becomes more developed when non-living phenomena are synthesized into living phenomena. Consequently, greater freedom and greater unity of purpose are observed in the behaviour of living phenomena. Living organisms have the capacity for evading the deterministic

laws which are imposed upon them from the environment; and even when they obey the deterministic laws they do so through adaptation to the environmental conditions. It is quite evident, then, that a living system has greater individuality, freedom and unity of purpose than a non-living system. The creative acts of the living phenomena are more meaningful than those of the non-living phenomena. Most of the creative activities of living organisms are oriented towards self-preservation and race-preservation which are the most essential prerequisites for the creation of higher values. The phenomenon of gene mutations is a corollary of the principle of self-preservation and race-preservation. The phenomenon of gene mutations increases the adaptative possibilities of living phenomena, particularly of the lower forms of living phenomena. Living phenomena, particularly the lower forms of living phenomena, mutate spontaneously regardlessly of the fact whether all the mutants will be selected for survival or not. The phenomenon of gene mutations seems to be an experimental approach to Nature with the purpose of survival of at least of some of the mutants. In other words, gene mutations of living phenomena seem to be a sort of trial and error approach for suitable adaptation to the environmental conditions. Living phenomena try to invade the different aspects of the environment by producing different types of mutations. Therefore, it seems quite possible that the first adaptative radiation in Nature was in the form of trial and error adaptive attempts on the part of various mutants. Living organisms tried to consolidate themselves by producing innumerable variations of their kind. This clearly indicates that the behaviour of living organisms is not meaningless, but it expresses some purpose. We, therefore, suggest in most emphatic terms that the behaviour of living organisms is definitely teleological. The view suggested here is diametrically opposed to the views of most of the modern biologists according to whom there is no teleology in the behaviour of living organisms and in the evolutionary process. It is quite likely that most of the modern biologists interpreted the behaviour of living organisms as non-teleological probably because the behaviour of living organisms obey more the indeterministic laws than the deterministic. That is the reason why most of the

modern biologists believed that there was an element of 'chance' both in gene mutations and the evolutionary process. In our view, the spontaneous gene mutations in living organisms appear to be analogous to the value creations of creative artists. The entire evolutionary process appears to be oriented towards the goal of self-preservation and race-preservation. Moreover, the fact that there is gradual transformation of living phenomena from the lower to the higher, less complex to the more complex hints at the fact that the evolutionary process is moving towards the creation of individuals with greater and greater creative purpose. Julian Huxley pointed out that there was no progress in the evolutionary process since it is found that innumerable 'lower' animals continue to survive alongside the so-called 'higher' animals. This argument seems to be flimsy and naïve. Nobody, we believe, would argue that there is no intellectual, ethical or aesthetic progress in the human society on the ground that a vast majority of uncreative individuals continue to survive alongside the creative ones. It must be acknowledged that creative advance is there in the human society in spite of the fact that a vast majority of uncreative individuals continue to survive. The actions of creative individuals clearly indicate that they behave in an indeterministic fashion. The less complex living phenomena out of which the more complex have evolved also seem to behave in an indeterministic fashion because they also have some rudiments of creativity. This analysis of the mode of behaviour of the living and the non-living phenomena will enable us to conclude at much later stage of this work that the creative process of the entire reality takes place according to indeterministic laws.

In the conclusion, it may be stated again with some emphasis that there is no sharp line of demarcation between the living and the non-living phenomena. Recent researches in biophysics and biochemistry have thrown sufficient light on the nature of living phenomena with the result that living phenomena do not present as many difficulties and enigmas as they did in the past. There seems to be a definite link and continuity between the living and the non-living phenomena. Consequently, it is observed that there is an ever-increasing convergence of knowledge with the

result that there is greater and greater confluence of the different branches of sciences. There is greater and greater co-operation between experts in the different branches of sciences and persistent efforts are being made by scientists to explain the living and the non-living phenomena in terms of more and more simple constructs. Consequently, it is observed that physicists as well as biologists have almost similar aims of giving a simplified picture of Nature. On the one hand, physicists tried to explain the physical reality in terms of electro-magnetic field, and, on the other, biologists tried to explain living phenomena in terms of complex colloids, enzymes, proteins, amino-acids and the like. If the analysis of physicists and biologists is pursued carefully it will be found that both the living and the non-living phenomena are composed of matter with one of the main differences that whereas the non-living phenomena are relatively simple structures the living phenomena are relatively more complex structures. To put it briefly, it may be said that the biological functions are determined by the complexity of molecular structure. Complex molecular structures abound more in the higher forms of organisms than in the lower. It is obvious, then, that function depends upon the nature of a structure of a system. It is found that when matter attains a particular state it comes to possess certain biological functions. This leads us to the conclusion that the living phenomena have emerged out of the non-living. There are sufficient reasons for believing that the first forms of living phenomena were formed out of the non-living matter,—a process which is technically known as *abiogenesis*. Perhaps aeons of years ago during pre-living stage certain chemical substances could perform certain functions which had some resemblance with living phenomena; but that was perhaps a very slow process with slow chemical reactions. It is most likely that at some later date with the synthesis of the self-duplicating molecule out of certain chemical substances the first living form made its appearance. Living phenomena, therefore, can be distinguished from non-living because the former can perform certain physiological processes in accordance with certain physico-chemical laws and without the aid of any other principle like an 'entelechy'. Living phenomena have the

property of transforming the environmental materials into the specific type of materials of living organisms. The living phenomena acquire new properties and behave in relatively novel ways compared to the non-living when the latter get synthesized into new functioning wholes out of the latter.

A living phenomenon may be defined from our philosophical standpoint as an organized whole of psycho-physical entities with a dominant urge for progressively developing its inherent teleology. A living organism has both physical and psychical aspects since it is an organized whole of psycho-physical entities. Its volume and structure constitutes its physical aspect, and its dynamism including its properties of assimilation, growth, reproduction etc., is the expression of its psychical aspect. As soon as psycho-physical entities get integrated into an organized whole it immediately comes to possess an inherent teleology through the unique integration of the psychical aspects of the conglomerating psycho-physical entities. The nature of inherent teleology of a living organism is determined by the dynamic structure of the uniquely integrated psycho-physical entities. The teleology referred to here is characterized as 'inherent' because a living organism comes to possess it as soon as a dynamic structure comes into existence through the unique integration of the psycho-physical entities. It is also quite obvious that the teleology of an organism is not a fixed and static principle, but it is also dynamic like the dynamic structure itself. The properties of of assimilation, growth, reproduction, adaptation etc. are the expressions of its inherent teleology. The uniform behaviour of a living organism is the expression of the latter's unity of purpose; and occasional novelty in the mode of behaviour of an organism is due to the latter's implicit urge for the creation of novelty. The behaviour of the cellular structure is more free, orderly and meaningful than that of an atomic system because the teleology of the former is more well-defined than that of the latter. A living organism, therefore, has greater unity of purpose and lives in greater independence of the environment than an atomic system. It behaves mainly due to the direction of its unique teleology and aims at the achievement of its specific goal. The immediate goal of living phenomena consists in the attain-

ment of stability and consolidation through the exploration of the various possible suitable environments for the survival of the maximum number of individuals. The survival of the living species is one of the most important prerequisites for the creation of novel and original values. It may be mentioned here that the struggle for existence is not only found in the less complex forms of organisms, but also in the *homo sapiens*. The range of the novel and original values created by the human individuals is still quite narrow because the problem of survival of the latter has not yet been solved quite successfully. It is evident, then, the urge for survival is one of the main expressions of the inherent teleology of living phenomena. It may now be suggested at the conclusion of this chapter that a living organism is ~~nothing~~ but a new dynamic arrangement of psycho-physical entities which are the ultimate constituents of reality. The living organisms behave in a different way from the non-living phenomena mainly because the teleology of the former is more well-defined than that of the latter. The function of an organized whole of psycho-physical entities is determined by the dynamic structure of the latter. Thus the definition of the living phenomena differs from that of the non-living mainly with reference to the respective functions of the two.

CHAPTER IV

THE NATURE OF HUMAN PERSONALITY

The study of human personality is of prime importance for getting a clue to the nature of human personality. Of all the different types of dynamic organizations of psycho-physical entities of our world the meaning and the teleological aspect is most explicit and well-defined in human personality. Hence, if we get a comprehensive picture of human personality, we can also get some idea of the nature of reality for the former constitutes an integral part of the latter. The meaning of reality, at least certain aspects of it, will be revealed to human personality when it has clear and comprehensive knowledge of its own nature for a sense human personality represents, however imperfectly, some of the fundamental laws of reality. An attempt will be made here to briefly discuss the nature of human personality from some of the major points of view in order to have a comprehensive picture of human personality.

The nature of human personality will be discussed first from the philosophical point of view. In connection with the discussion of the philosophical theories of personality the views of only some of the outstanding modern philosophers will be stated and examined briefly.

Descartes started his philosophical investigation with universal doubt. His philosophical investigation through doubt revealed to him an important truth. He found that he could doubt everything, but he could not doubt his own existence. We become conscious of our own existence in the act of doubting. Doubting is a kind of thinking. Thought process implies a thinker or the self which thinks. Descartes argued as follows: *I think, hence I am.*¹ The doubting Being is the self. It is the self that doubts, understands, imagines and perceives.² The existence of the self is proved by the fact of doubting or thinking.

1 *Discourse on Method*, Chicago, Open Court Publishing Co., 1913, p. 35.

2 *Meditations*, Chicago, Open Court Publishing Co., p. 107.

Thinking is a fact that one directly experiences. The knowledge of the self is a matter of intuitive apprehension. The immediate experience of the self cannot be doubted. The knowledge of the self is certain and self-evident. The reality of thought necessarily implies the reality of the thinker or thinking self. According to Descartes, personal experience of the self is a measure of certainty; the self is a substance whose nature consists only in thinking, and it is not dependent on any material thing;³ the thinking substance is completely different from the body. Mahaffy remarked that immediacy of perception was the test of truth in Descartes' philosophy; and that according to Descartes' formula: '*cogito ergo sum*', we should accept as true what we perceive clearly, and nothing else.⁴ We have direct experience of our consciousness at every moment, and therefore ~~we~~ are conscious of our existence. This is a brief statement of Descartes' thesis.

Veitch gave four possible interpretations of Descartes' formula: '*cogito ergo sum*', as follows: Firstly, my existence is the effect of my being conscious. Here my consciousness is first in order of existence. Secondly, my being conscious implies that I existed before in order to be conscious. Thirdly, my being conscious is the means of knowing my existence. Fourthly, my being conscious informs me of my existence. Veitch pointed out that the fourth interpretation properly explained Descartes' formula.⁵ My being conscious is first in order of knowledge. Veitch's interpretation of Descartes's formula seems to be correct. In the sequence of time I am first aware of my experience, and then aware of my existence. However, the knowledge of my existence is not derived inferentially from the awareness of my experience. The awareness of experience does not necessarily establish the objective validity of our knowledge of the self. Descartes did not clearly state the precise nature of the self, but merely described its cognitive and affective processes. The various mental processes alone do not fully describe the nature

³ *Discourse on Method*, pp. 35-6.

⁴ *Descartes*, p. 107.

⁵ *The Methods, Meditations, and Selections from the Principles of Descartes*, English translation by Veitch, pp. xxix-xxxi.

of human personality. Laird remarked that Descartes assumed much more than what he actually proved.⁶ Descartes mentioned that the self was a substance of which thinking was an attribute. He could not establish by any arguments that the self was spiritual in its nature, and that it did not in any way depend upon body. He could not also advance any arguments to prove that the self was a substance. He assumed the existence of the self dogmatically for the awareness of thought process does not necessarily establish the existence of the self still less the existence of a spiritual substance.

Locke inaugurated the modern empiricism. According to him, there are no innate principles. There are no primary notions which are imprinted upon the human mind from the very beginning. The fact that savages, children and idiots do not perceive innate ideas bears testimony to the fact that there are no innate ideas. Locke, therefore, maintained that the ideas were not innate, but that they were acquired. The mind is a *tabula rasa*,—an empty tablet. It is free from any impressions. Ideas come into the minds of children by degrees through experience. The senses are a great source of ideas, which produce perceptions in the mind. The self begins to have ideas when it begins to perceive. It cannot function unless the senses furnish it with ideas to think upon.

Locke maintained that the existence of the self could be intuitively apprehended. His argument for the existence of the self is similar to that of Descartes. He pointed out that the existence of the self could be apprehended directly, and that therefore it did not stand in the need of any proof. We are clearly aware of our feelings, thoughts emotions, perceptions etc. Experience, therefore, gives us intuitive knowledge of our own selves.⁷ Locke maintained that the self was an immaterial substance. The immaterial substance has the power of thinking, feeling and willing. It is capable of producing motion in the body by will. Locke maintained that there were two kinds of substances, viz., material and spiritual; and that the substances

⁶ *Problems of the Self*, New York, Macmillan Co., 1917, p. 309.

⁷ Locke, J., *An Essay Concerning Human Understanding*, Edited by Pringle-Pattison, pp. 309-310.

were the 'support' of qualities. The simple ideas belong to something. A substance is something to which the simple ideas belong. A substance is the uniting principle of the simple ideas. Thus, by putting together the ideas of thinking, perceiving, willing etc., one may have the notion of an immaterial substance. A spiritual substance is the substratum of all mental processes. The ideas of the mind subsist in the spiritual substance. Likewise, material qualities subsist in the material substance. The substances, then, are the supports of physical and mental qualities. However, Locke admitted that he did not have any clear idea of substance. He confessed that the substance of spirit was unknown to us, and so was the substance of the body.⁸ Nonetheless, Locke insisted that one could not deny the substances of matter and spirit simply because one did not have any clear idea of these substances.

Locke also discussed the problem of personal identity. He maintained that the immaterial substance was identical. A thinking individual has personal identity and has the power of recognizing himself as identical at different times and places. Self-identity of an individual depends upon his thinking and memory. Personal identity consists in the identity of consciousness. It unites all actions and experiences in the same individual. Personal identity is determined by continued consciousness and memory which bridges over the successive stages of conscious experience. Memory limits the span of personal identity.

Locke's doctrine of the spiritual substance and personal identity is open to certain objections. He was unable to solve the mystery of the self and avoided the theoretical questions regarding it altogether. His argument for the existence of the self is open to the same objections that have been put forward against those of Descartes. Locke's doctrine of substance is very obscure. He himself confessed his ignorance about the nature of substance. He pointed out that substance was something about which one knew nothing. He called it an 'unknown and unknowable somewhat'. This confession clearly indicated that Locke

⁸ *An Essay Concerning Human Understanding*, (Edited by Fraser), p. 415.

was not able to understand the nature of the so-called spiritual substance. He was obviously speaking of something about which he had no knowledge whatsoever. Yet his whole philosophy of the self was based on the notion of the spiritual substance. His theory of the self is, therefore, far removed from Nature for the constructs with which he dealt were unverified. Locke maintained that the spiritual substance was the support of the mental qualities. But he was unable to explain satisfactorily why these mental qualities subsisted in the spiritual substance. He dogmatically assumed the existence of the spiritual substance as the 'support' of ideas. If the spiritual substance is non-material in its nature, how can the impressions of experience be made on it? Locke had a confused notion of the nature of substances and qualities, and he confused the whole issue while discussing the problem of personal identity. He maintained that personal identity consisted not in the identity of substance, but in the identity of consciousness.⁹ But he mentioned elsewhere that ideas could not exist by themselves apart from the thinking substance. If that were so, how could consciousness maintain its identity apart from the spiritual substance which Locke assumed as the only abiding entity? Locke sometimes gave priority to substance and sometimes to consciousness while explaining the nature of the self. In a letter addressed to Stillingfleet Locke wrote that the general idea of substance being everywhere the modification of thinking joined to it made it a spirit.¹⁰ It implies, then, that thinking creates the self. This is again a confusion in Locke's doctrine of the self.

While Locke recognized two kinds of substances, Berkeley recognized only one, viz., the spiritual substance. Berkeley rejected the concept of the material substance and regarded it only as an idea of the mind. Spirit is the only substance. It thinks and wills. It is the soul or the self. The spirit is not an idea, but it perceives them and thinks about them. Berkeley maintained that the perceiving being was the Spirit, Soul or Self.¹¹

⁹ *Op. Cit.*, p. 460.

¹⁰ Quoted in Laird's *Problem of the Self*, p. 319.

¹¹ Fraser, A. C., *Selections from Berkeley*, Oxford, Clarendon Press, 1911, p. 33.

Ideas exist in mind and are perceived by it, but mind is not identical with them. Ideas are fleeting; they cannot exist by themselves; they subsist in the spiritual substance. Ideas are in themselves inactive. Spirit, on the other hand, is an active being. Ideas exist so long as they are being perceived by the mind. But the substance which supports ideas cannot itself be an idea. Berkeley, therefore, maintained that the substance which supported or perceived ideas could not itself be an idea or like an idea for that would be self-contradiction.¹² Spirit is the repository of all ideas. It sustains, perceives and operates upon them. Berkeley maintained that one could not have an idea of the soul for the self which was the subject of all ideas could not know itself; but that one could have a *notion* of the spirit, though one could not have an idea of it.¹³ One can have a *notion* of the operations of the mind, such as perceiving, thinking, willing, feeling and the like. It is necessary to mention here that Berkeley means by *idea*, the passive sensuous experience, and by *notion* the intellectual perception or intuition. He pointed out that one could comprehend one's own experience by inward feeling or reflection.¹⁴ He thus tried to establish the existence of the soul and assumed that the soul could not exist without being conscious.

Berkeley denied the existence of the material substance. 'The material objects do not exist by themselves; they have no objective reality; they exist so long as they are perceived by the mind; their *esse* is *percipi*; they do not exist independently of the perceiving mind. When finite minds do not perceive material objects the Divine Mind perceives them. Material objects are, therefore, dependent on the perceiving mind. Berkeley denied the existence of material substance as the substratum of physical qualities.¹⁵ He further pointed out that finite selves depended on God; and that God produced all sensations in finite minds.¹⁶

Berkeley's view is open to certain criticisms. In Berkeley's view only finite selves and God are real and nothing else. He

12 *Op. Cit.*, p. 101.

13 *Op. Cit.*, pp. 107-108.

14 *Op. Cit.*, p. 94.

15 *Op. Cit.*, p. 34.

16 Berkeley, G., *The Principles of Human Knowledge*, London, Thomas Nelson & Sons Ltd., 1942, p. 122.

dogmatically assumed the existence of the spiritual substance without giving any adequate justification for his assumption. He did not show how mental qualities inhered in the spiritual substance. He was also unable to explain how knowledge of material objects was produced in the mind as they are nothing but creations of the perceiving subject. Knowledge is the result of the interaction between the object and the perceiving individual; hence, if an object does not exist independently of a perceiving individual knowledge cannot arise. An individual could not perceive the physical properties of an object if they did not actually belong to a material object. Even hallucination presupposes prior perception of physical objects. In brief, knowledge of any form is impossible without the independent existence of objects. Berkeley was perhaps aware of this difficulty and for that reason he maintained that ideas and sensations were produced in the minds of finite individuals by God. Instead of believing that physical objects produced sensations, Berkeley maintained that God excited sensations in finite individuals. This was a positive abandonment of consistent thinking for he was neither able to disprove the objective existence of the physical objects nor prove the existence of God. By assuming the existence of God as the eternal perceiver of the physical objects, Berkeley was simply evading the difficulties of his metaphysical system. Finally, Berkeley did not satisfactorily explain the nature of finite self. He simply assumed that finite spirits and God existed.

While Berkeley recognized the existence of spiritual substance, Hume rejected it altogether. He did not believe in the existence of a permanent spiritual substance. He maintained that the self was a series of perceptions. To use his expression the self is a 'heap or collection of different perceptions'.¹⁷ Perceptions are discrete and disconnected. A mass of perceptions is wrongly regarded as a thinking being. Perceptions exist by themselves. They are not connected with one another by any substance. The self is nothing but a flux of perceptions. The conception of a permanent and identical self cannot be obtained by logical analysis. Identity and continuity of the self is nothing

¹⁷ *A Treatise of Human Nature*, (Edited by Selby-Bigge), Oxford, Clarendon Press, p. 207.

but a fiction. There is no enduring impression to give the idea of a permanent self. Mind is like a theatrical stage where the isolated impressions appear and disappear with great rapidity. Mind is nothing but a succession of impressions. Through self-observation one always gets the impressions of pleasure, pain, heat, cold, etc., but never gets the idea of a permanent self.¹⁸ Perceptions are connected with one another by association of ideas. One's idea of personal identity is, therefore, due to the combination of perceptions in accordance with the principles of resemblance, contiguity and causation. Hume pointed out that one could not have the idea of personal identity had there been no memory. Memory is the source of personal identity. However, memory does not presuppose a permanent self. It is just the projection of the causal series backwards. To sum up Hume's thesis: there is no permanent self; and the identity of the self is nothing but a fiction. The self is not a reality, but an appearance.

Hume's doctrine of the self is open to certain objections. The greatest drawback of Hume's theory lies in his total denial of personal identity. It is absurd to suppose that bare impressions should be capable of knowing, feeling and willing. Mere impressions do not give coherent knowledge of external objects. Personality cannot be equated with discrete sense-impressions. It presupposes some permanent principle which interrelates and co-ordinates sense-impressions.

Hume pointed out that the so-called self was nothing but a bundle of perceptions. This expression seems to be unsatisfactory. What is the principle that binds the isolated perceptions together? Hume suggested that different perceptions were connected together in imagination by association of ideas.¹⁹ But his view does not seem to be logically tenable for association of ideas cannot take place spontaneously by itself, but it presupposes the existence of an identical personality which associates all ideas and impressions systematically. Hume surreptitiously introduced an identical unifying principle in the garb of his doctrine of

¹⁸ *Op. Cit.*, p. 252.

¹⁹ *Op. Cit.*, p. 260.

association of ideas. Association of ideas is due to the organizing activity of a dynamic personality. Hume described mind as 'a theatre in which ideas come and go.'²⁰ It must be mentioned here that Hume cannot use this expression without undermining his position. He surreptitiously assumed the existence of an identical mind, viz., the theatrical stage, in which isolated perceptions appear and disappear. He argued that an individual could not catch his so-called self except fleeting sense-impressions. It may be true that an individual never catches his so-called self through introspection, but that does not mean that the continuous principle of personality which experiences sense-impressions does not exist. Sense-impressions do not float by themselves in vacuum; but rather they all belong to the continuous principle of personality. There must be some identical principle which binds the discrete sense-impressions into a 'bundle'. It is the dynamic principle of personality which organizes all experiences into coherent knowledge. Hume denied the existence of the continuing principle that runs through the different states of a personality. He overlooked the fact that the different impressions are organized and co-ordinated by the continuing principle of personality.

Memory cannot be satisfactorily explained if personality is regarded as a series of isolated perceptions. The facts which are perceived are related systematically and retained in the same personality till the time of actual revival. That is, the impressions which are experienced or learned are retained in the personality prior to their actual revival. The retention of past impressions and their exact revival after a lapse of some time presupposes some organizing activity of an identical personality. Personality has a feeling of familiarity with its past impressions. Recognition is not due to the resemblance of impressions as Hume supposed, but rather it involves actual revival of past impressions together with the feeling of familiarity. The possibility of memory and recognition, therefore, seems to testify the existence of a permanent personality.

Hume maintained that the self was a flux of perceptions. But the isolated and fleeting perceptions themselves cannot be

²⁰ *Op. Cit.*, p. 253.

conscious of change. Perception of change presupposes the existence of an identical personality which comprehends the changing impressions in a single grasp. A personality could have no idea of change had there been a mere flux of discrete perceptions with intermediate gaps. Perception of change, therefore, presupposes the existence of an identical personality which holds the changing perceptual states in a single grasp and perceives them as a continuous stream.

Kant made a slightly different approach to the problem of the self. He maintained that the self was a subject. The subject is the transcendental unity of apperception. It is the source of unity in experience. It is the determining subject which compares perceptions with the unity of consciousness. There can be no consciousness of the self as a unity unless it is presupposed that the self is actually a unity in its nature. The transcendental unity of self-consciousness is the condition of unity of one's experience. The identity of the self is the presupposition of all knowledge. The categories of understanding stand under the original unity of apperception. Nothing can be cognized as an object of knowledge unless it is brought under the unity of self-consciousness. The perception of objects is, therefore, determined by the unity of self-consciousness. However, Kant pointed out that the self cannot be known as an object. The ultimate nature of the self cannot be known through self-consciousness. The self which is the universal principle of knowledge cannot know itself just as the eyes which see everything cannot see themselves. It is the judging and determining subject with reference to which all judgments are made. The thinking subject cannot be regarded as a predicate of thought; that is, the self cannot be conscious of itself as an object. The categories of understanding cannot be applied to the self which is their source. The self cannot be brought under the categories of understanding and known as an object. The self cannot be subjected to the forms of understanding for it is itself the source of understanding. Kant, therefore, came to the conclusion that the self cannot be known as an object.²¹ The self as it is in its ultimate nature cannot be

21 *Critique of Pure Reason*, (English translation by Meiklejohn), p. 219.

proved because that would be entering into the region of the noumenon. Kant maintained that human knowledge could not extend beyond the phenomenon and comprehend the noumenon. The transcendental self can be neither proved nor disproved conclusively by the categories of understanding.

Kant's view of the self involves certain difficulties. Kant assumed that the self had a fixed nature. He did not advance any satisfactory reason in support of his view. He further opined that the self was something permanent and static. In his philosophy the self is the centre and the 'referent' of the entire knowing process and the external objects have only a derived nature. Kant's theory of knowledge rests upon a very frail ground for he did not give any satisfactory reason to prove his thesis that the self had a fixed and static nature and that the external objects got their specific form only due to activity of the knowing mind. His entire theory of knowledge may turn out to be fallacious if it is proved, as modern psychology tries to do so, that the personality is dynamic in its nature with its changing criteria of knowing the objective reality. Moreover, the term 'subject' does not seem to be a useful construct for there is no way of establishing the belief that the personality is a subject. Therefore, the description of personality as a 'substance' as well as a 'subject' seems to be equally unsatisfactory.

John Stuart Mill tried to revive Associationism and maintained that the self was a series of ideas in which memory connected different ideas into a continuous series. He maintained that experience was a series of discrete impressions. The self is a series of feelings, and the possibilities of the present feelings which constitute the state of the present consciousness. However, the self is not merely a series of present feelings, but it also includes the memories of the past and the expectations of the future. Mill observed that a series of feelings was aware of itself as a series.²² He pointed out that the identity of the self could not be explained without memory. An individual is aware of a succession of feelings through memory. The self itself is the Being which is aware of itself as a series feelings.

²² Examination of Sir William Hamilton's Philosophy, p. 241.

Mill could not justify his position as a supporter of the doctrine of Associationism and he himself confessed that his view ran into insoluble difficulties. His thesis that a series of feelings is conscious of itself as a series seems to an absurd idea. Feelings cannot exist by themselves; but rather they belong to a personality and are experienced by it. Mill pointed out that personal identity was due to memory. It may be true that knowledge of the continued existence of the mental states is due to memory. But it cannot be denied that the existence of memory presupposes the existence of an identical personality which makes the existence of memory itself possible. It is the teleological personality which organizes all experiences into a coherent whole. Memory seems to have only a subsidiary rôle in organizing experiences into coherent knowledge.

William James also advanced a theory of the self very similar to that of J. S. Mill. He maintained that mind was a stream of consciousness. Mind is not a series of disconnected perceptions. The stream of thought is continuous; there are no gaps, intervals or divisions in it. He pointed out that the expressions 'river' and 'stream' are suitable metaphors for describing the nature of consciousness.²³ He maintained that the passing thoughts did not fly about loosely, but they belonged to a mind. There is a continuity of consciousness, and these conscious states are brought together by the 'warmth and intimacy' which constitute our selfhood. It is true that one has a feeling of personal identity, but there is no personal identity except in the stream of consciousness itself. Our thought comes into existence and perishes after replacing it by some other thought. But the new thought fully knows and understands the departed thought and feels a sense of kinship with it. Each thought is born an owner, and dies owned, transmitting whatever it has to its own later proprietor.²⁴ He did not believe in any permanent soul-substance. He maintained that the passing thought itself was the thinker.²⁵

It is true that James' view of the self remedies some of the

²³ *Principles of Psychology*, London, Macmillan Co., Vol. I, p. 239.

²⁴ *Op. Cit.*, p. 339.

²⁵ *Op. Cit.*, p. 342.

defects of the Humean theory²⁶ of the self, but the view of the former is open to certain objections. James did not believe in a permanent self. He maintained that the passing thoughts themselves were thinkers. Strictly speaking, therefore, James' view presents the picture of the self as an undying phoenix which is perennially born out of its own ashes. Such a view may satisfy poetic fancy, but it is unsatisfactory from the scientific point of view. Integration of experience is not possible, unless there is something permanent to hold all isolated experiences together into a coherent system. Further, it seems to be technically unsound to identify the passing thought itself with the thinker. Thought is a function of the conscious mind or personality; consequently, a function of the personality cannot be identified with the personality itself. Besides this, the intensity of mental states is not uniform at every moment of a person's life. During deep sleep, fainting fits, hypnosis, etc. the conscious mental processes are almost absent. A person would have no sense of personal identity after such episodes as hysterical fits, hypnosis etc., if his personality were not identical throughout all the passing mental states. James seems to be wrong in identifying the passing mental states themselves with the thinker or personality. It seems that personality is not identical with passing thoughts, but rather it is the organizer of the various mental states.

It has been discussed so far that the soul-substance theories and the self as subject and a stream of mental states are unsatisfactory in some respects or the other. In the following few pages the views of some of the idealistic philosophers on the nature of the self will be discussed briefly.

T. H. Green vindicated the spiritual nature of man. He maintained that the self was timeless and beyond change. The self is eternal consciousness which perceives changes in Nature. There is a unifying principle in consciousness which perceives the relations between objects. Green pointed out that there was no difference between the source of relations and the source of one's knowledge of them.²⁷ •The knowledge of inter-related

²⁶ *Prolegomena to Ethics*, Oxford, Clarendon Press, 1924, p. 40.

facts and continuous change in Nature presupposes an eternally conscious spirit. The spirit which is conscious of change cannot itself be subject to change. Green maintained that there could be no such thing as time if there were not a self-consciousness which was not in time.²⁷ The eternally conscious spirit is beyond time though it is itself conscious of time. The self is capable of perceiving relations between events. The eternal spirit that pervades Nature is the same as the eternal spirit that is present in human personality. The finite self is real. It gradually realizes the perfection of the Absolute spirit by its free moral activities.

Green's view is open to certain objections. It seems that he made a serious mistake in thinking reality to be static and changeless. It is doubtful whether the term 'eternal' can be considered as a useful construct with reference to personality which has post-existence, but no pre-existence in the strict sense of the term. The self is not static and changeless, but it is active and dynamic. Green's view of the timeless self was not based on any empirical ground, but it was the result of his speculative thinking. Consequently, his theory of the self seems to have very little practical significance. He simply assumed that the self was timeless without giving any satisfactory justification for his assumption. He merely pointed out that the timeless self must be present at all times to witness the relation of events; or that the self itself must be changeless in order to be aware of the change of events. Green's logic on this point does not seem to be sound. It is not necessary for the personality to be static and changeless in order to be aware of change. It seems to be quite possible for the personality to be dynamic and at the same time an evaluator of change. It is possible for each personality to have his own framework of reference for determining change of events or sequence of time. The possibility of the knowledge of events does not necessarily presuppose the existence of an eternal self. H. Rashdall remarked that it was not necessary for a person to exist in the eighteenth

27 *Op. Cit.*, p. 62.

century in order to know the events that occurred during that period.²⁸ Alliota remarked that in Green's view there was no real existence of time, but that there was a mere concept of time, and that likewise there was no real existence of an individual, but merely the concept of an individual which by its very nature must be universal.²⁹ In Green's view, then, time is reduced to an appearance in relation to the timeless self. Alliota remarked that one could not conceive of a consciousness which was not living, developing and creating. In sum, the self is not timeless as Green supposed, but rather it involves time.

F. H. Bradley was a post-Hegelian idealist. However, his idealistic doctrine is unique in certain respects. Unlike most of the idealistic philosophers he regarded the self as a mere appearance. However, the self is not an absolute non-entity. Even though the self is not real, it is grounded in reality. The self becomes real when it is dissolved and transmuted into the Absolute. The reality of the individual self cannot be established because it is full of contradictions.

Bradley maintained that anything finite contained contradictions within itself, and that, consequently, all finite things were appearances, and not reality.³⁰ According to him, the self as a finite individual is also an unintelligible appearance. At any given time a self is a mass of sensations, feelings and thoughts. But a mere mass of mental states at any given time does not give an adequate reply to the question: what is the self? The real nature of the self is something which cannot be considered as dependent upon relations which change and fluctuate. When a person's life is examined from birth to death, the so-called self, which is the ultimate uniting principle, can hardly be found. For one aspect of the personality varies from another, and sometimes quite radically.

Bradley next examined whether personal identity could be explained in terms of memory. Memory of self-sameness

28 *The Theory of Good and Evil*, Oxford, University Press, 1924, Vol. II, p. 246.

29 *The Idealistic Reaction Against Science*, The Macmillan Co., p. 100.

30 *Appearance and Reality*, London, Swan Sonnenschein & Co., 1908, p. 76.

persists only for a certain period of time. It does not persist under all conditions and circumstances. For instance, in certain cases of surgical operation, some gap is created in memory of the patient preceding the time of operation and the period following it. This fact indicates that memory cannot account for the identity of the self.³¹ Bradley then examined whether the self was some kind of monad.³² If this monad or simple unit is considered to be moving parallel to a person's life or stands in permanent relation to the successive states of his life, then also it hardly solves the difficulties of the conception of self-identity. For if this unit suffers all changes and finally gets annihilated with the termination of the personality, then the monad can no longer be considered as simple. Any entity which is subject to change cannot be called simple or permanent.

Bradley tackled another possible meaning of the self. It may be said that the self is something in which personal interest is being taken.³³ The elements felt as belonging to me may be considered as the self. Interest is being taken in a thing through the feelings of pleasure and pain. In that case, the self would be merely a collection of feelings; and whatever is incorporated into the personality from time to time in the form of feeling of interest would become a part of the self. Obviously, then, if the feeling of interest is the sole constituent of the self, then the nature of the latter would be very unstable and vary from time to time.³⁴ Bradley, therefore, rejected this view as unsatisfactory for explaining the identity of the self.

He turned next to the most fundamental question confronting the problem of the self, *viz.*, the subject and object distinction within the self.³⁵ The personality of an individual contains both subject and object, self and not-self. The self, then, is a source of contradiction. The not-self cannot be considered as identical with the self.

Bradley analysed another possible meaning of the self. The

31 *Op. Cit.*, pp. 83-84.

32 *Op. Cit.*, pp. 86-7.

33 *Op. Cit.*, p. 87.

34 *Op. Cit.*, p. 88.

35 *Op. Cit.*, p. 88.

nature of the self may be explained in terms of activity.³⁶ But activity is also a source of contradiction and gets involved in insoluble internal discord. Bradley's argument for the self as an active principle may be summarized as follows: Let the self before activity be represented by the lettered *A*, and then with activity as *AB*. But the transition of *A* into *AB* involves the existence of a third entity *b*, which represents change. It may be called the ideality of a thing beyond its actual limit. The idea of change involves insoluble contradiction.

Bradley next examined whether self-consciousness could give us knowledge of the self. He found that the act of self-consciousness could not give us knowledge of it for self-consciousness contained its own discrepancies. In the act of self-consciousness the self is divided into subject and object, and thereby gets involved into the difficulties of relation. Unity and diversity cannot be reconciled in the self. Bradley, therefore, arrived at the conclusion that the self was not a reality, but that was only an appearance.

Bradley's view of the self as an appearance is open to certain criticisms. H. L. Haldar remarked that Bradley did not follow any consistent method for giving a logical solution of the problem of appearance and reality. Bradley started his metaphysical investigation with a dogmatic assumption that the Absolute was self-consistent, and then rejected all finite entities as self-contradictory appearances. Haldar remarked that to demolish all finite appearances as self-contradictory and then to revivify them at one stroke in the Absolute seemed something like a miracle.³⁷ It is difficult to imagine how the future entities can be rejected as appearances when strictly speaking we are not in possession of an ultimate criterion of truth. W. S. Gamertsfelder suggested that reality must be interpreted in terms of finite experience, and not in terms of the experience of the Absolute. The pattern of the self is best known to us; and hence, the structure of reality can be adequately interpreted only

³⁶ *Op. Cit.*, p. 96.

³⁷ *Neo-Hegelianism*, London, Heath Cranton Ltd., 1927, p. 249.

in terms of the unity of the self.³⁸ The confusion in Bradley's theory of the self lies in the fact that he did not recognize the identity and permanence of the personality. That is why Bradley is forced to regard the self as a conflux of qualities. If the self is nothing but a collection of qualities, how are the qualities collected together? The defect of Bradley's view lies in the fact that he tried to explain away the whole personality by pointing out the discrepancies in the different mental aspects. The very awareness of the discrepancies presupposes some kind of unity in the self. Metz remarked that by denying the unity of self-consciousness he equated the self with the sum of its experiences instead of the unity of these and thus ending with the view that the self was merely a bundle of discrepancies.³⁹ The difficulties in Bradley's theory of the self are due to the fact that he regarded the self as a mere appearance. His main aim was to establish the coherence of the Absolute by pointing out the internal contradictions in the appearances.

There is a close affinity of Bosanquet's view of the self with that of Bradley. Bosanquet maintained that the self was not real, but that it was only an appearance. The idea of the real existence of a finite self is in a way false and misleading. The self attains its true individuality when it is transmuted, transformed and dissolved into the Absolute.⁴⁰ True individuality consists in non-contradiction. The finite self is imperfect so long as it is a mere appearance. The goal of a finite self consists in getting transformed into the Absolute. Bosanquet pointed out that the life of a finite self was the life of struggle, hazard and hardship. The self comes across failures and defeats in the process of self-transmutation. The finite self is incomplete, and it is not fitted to be the absolute end in itself; and it wants something above it to make it dare and do and hope to be.⁴¹ Bosanquet

38 *Thought, Existence and Reality*, Ohio, Ohio State University, 1920, p. 93.

39 *Hundred Years of British Philosophy*, London, George Allen & Unwin, 1938, p. 338.

40 *The Principle of Individuality and Value*, New York, The Macmillan Co., 1912, p. 383.

41 *Op. Cit.*, p. 25.

pointed out that the self was partial by its nature, and yet it possessed within itself the principle of infinity.⁴² Bosanquet was opposed to the idea of exclusiveness of a self from other finite selves in the Absolute. He did not regard the self as unique and separate. If the selves were self-identical and separate, there could not be any common interest or common ideal among them. Bosanquet maintained that the finite selves had common ideals and aspirations and that they shared their feelings with one another. There is unity and identity of content among them. Bosanquet maintained that the Absolute was the real individual and the goal of the finite individuals consisted in their ultimate transmutation into the Absolute.

Bosanquet's view is open to the same objections as have been pointed out against that of Bradley. Bosanquet seems to have undermined the importance of the finite personalities in describing them as worthless in themselves. He described the self as a vanishing entity. He also emphasized that the selves merged into one another in the process of transmuting themselves into the Absolute. It is unintelligible how the finite personalities discard their exclusiveness and merge into one another. Pringle-Pattison remarked that Bosanquet ignored the formal distinctness of the selves due to his extreme monistic bias. He further remarked that Bosanquet's theory did not contain the idea of the self at all; and that the universe, according to him, was nothing but a collection of qualities or adjectives which were all housed in the Absolute.⁴³ It is further unintelligible how the Absolute can be regarded as a real individual when Bosanquet failed to explain the real meaning of the finite individual. Finally, Bosanquet's view seems to be dogmatic when he pointed out that the world is 'the vale of soul-making' in which the finite individuals are faced with hazard and hardship. The initial pessimism and final optimism of Bosanquet's view seems to be the expression of his wishful thinking. •

Royce, whose main works preceded those of Bosanquet in

42 *The Value and Destiny of the Individual*, New York, The Macmillan Co., 1913, p. 4.

43 *The Idea of God*, New York, Oxford University Press, 1920, p. 271.

chronological order, maintained that the self was an ethical concept. The self embodies a meaning and purpose. It is a relative whole within the unity of the Absolute. Its purpose is in harmony with the whole reality. It realizes its nature when it surrenders itself to God. A finite individual is a servant of God.⁴⁴ The self gains its individuality in its union with God. It loses all its meaning without its subordination to God. The spirit of God compels an individual to be a free person,—a self.⁴⁵ The finite self is essentially volitional teleological and ethical; and its sole purpose is the realization of God. The finite individuals obtain their true individualities in their union with God. They are like helpless children in comparison to the majesty of God, and the values that they create are useless and trifling for they are all realized eternally in the mind of God.

The finite personalities are creators of ethical values, but it cannot be said on that ground that an individual is solely an ethical category. A teleological personality may create ethical, intellectual, hedonic and religious values with uniform interest. Therefore, it seems to be wrong to characterize the personality as an essentially ethical being. Further, a personality cannot be considered as essentially volitional in its nature. Apart from volition, cognition and feeling are equally important aspects of the mental life of an individual. Royce's view, therefore, seems to be narrow when he characterized the personality as essentially volitional and ethical. Moreover, Royce extolled the all-engulfing power of God so much that the finite individuals were reduced to mere puppets in relation to God.

McTaggart advanced a theory of the self which was different from those of Bradley and Bosanquet. According to him, the self is a spiritual substance. The self is real and simple. There is no bartering of consciousness between different selves. The self is something which cannot have parts in common with another self.⁴⁶ Perception, for instance, is personal. It cannot

44 Royce, J., *The World and the Individual*, New York, The Macmillan Co., Series II, p. 277.

45 *Op. Cit.*, p. 293.

46 McTaggart, J. E., *The Nature of Existence*, Cambridge University Press, 1921, p. 83.

be a part of more than one self. However, the private nature of the self cannot be proved because it is an ultimate problem.⁴⁷ There is no other reality but the plurality of selves. Each self is different from others in some respects or the other. It is an independent entity existing in its own right. It differs from all other selves fundamentally, and each differentiation is eternal. The selves might differ from one another in their original qualities, or in their relation.⁴⁸ The self is not subject to any change. It is eternal; and hence, it has neither any beginning nor end. It was never been created and it will never be destroyed. The identity of the self does not consist in the continuity of its consciousness or memory, but it is the changelessness of the spiritual substantiality. The self is conscious, but it is not self-conscious; and hence, its real nature is unknown.

The merit of McTaggart's theory lies in the fact that he emphasized the uniqueness and independence of the finite individuals. However, his view is not free from criticisms. McTaggart did not throw any light on the nature of the self; he merely stated that the real nature of the self was unknown because it was an ultimate problem. After McTaggart stated the incapability of the human mind to know the nature of the self he went forward and described the self as a spiritual substance. This seems to be an obvious contradiction in McTaggart's doctrine. McTaggart defined substance as that which has qualities.⁴⁹ If the self is a substance, it raises the question as to how the qualities are related to substance. McTaggart held that reality was spiritual through and through, and yet he described the spiritual substance in terms of the material properties; for instance, he described the states of the mind as 'parts'. McTaggart's use of material analogy to describe the spiritual reality seems to be inconsistent with the general tone of his idealistic theory. Pringle-Pattison remarked that McTaggart's view ended in mentalism for the latter believed that

47 McTaggart, J. E., *Some Dogmas of Religion*, Arnold, 1906, p. 251.

48 *The Nature of Existence*, Vol. II. p. 170.

49 'An Ontological Idealism', *Contemporary British Philosophy*, Edited by J. H. Muirhead, London, George Allen & Unwin, 1925, p. 253.

nothing but the selves existed.⁵⁰ The material objects cannot be regarded as selves in the strict sense of the term, and at the same time their existence cannot be denied. McTaggart dogmatically assumed that the self was eternal, changeless and perfect without giving any ground for his belief. The personality of which we are all aware is temporal, dynamic and relatively imperfect. McTaggart ignored the imperfections of an individual prior to the attainment of well-defined selfhood. Furthermore, the reality of time cannot be denied with reference to the individual as it was suggested by McTaggart. The personality acts, feels and experiences in time. It, therefore, does not seem to be timeless, but rather it is dynamic in its nature and it realizes its ideals and aspirations in time. Moreover, McTaggart held that there was a fixed number of selves; and that there could be neither any increase nor decrease in their number. But this seems to be an unfounded dogma for McTaggart did not give any evidence to prove his thesis. It seems, on the contrary, that new personalities are coming into existence with the passage of time. Finally, McTaggart remained silent on the real nature of the self. He simply pointed out that the self was conscious, but that was not self-conscious. If this is so, how could McTaggart distinguish between human consciousness and animal consciousness? It is an admitted fact that human beings are not only conscious but also self-conscious. McTaggart assumed the existence of the self without giving any proof.⁵¹ He simply stated dogmatically that the selves existed and nothing else.

C. D. Broad tried to revive the substance theory of the self. However, he gave a new explanation to the substantial nature of the self. He maintained that mind was a compound of the body factor and the psychic factor, and that the different characteristics of the mind belonged to this compound substance and not to its separate factors.⁵² Mind, then, is a compound of two independent factors, *viz.*, the organic factor and the psychic

⁵⁰ *The Idea of God*, p. 392.

⁵¹ *The Nature of Existence*, Vol. II, p. 115.

⁵² *The Mind and Its Place in Nature*, London, Kegan Paul, 1937, p. 538.

factor. The psychic factor cannot be completely identified with the mental substance even though the former possesses some of the features which generally characterize a mind. Mind is an emergent property which results from the combination of the organic factor and the psychic factor. Broad believed that this theory could satisfactorily account for the correlation between the body and the mind. He conceived mind as a compound substance in the analogy of a chemical substance. Elsewhere he pointed out that a mind might be described in the analogy of a material particle.⁵³ A mind may be analogous to material particles and it may have something analogous to the structure of a body. Two minds may come into contact with each other during telepathic communication just as two bodies may come into contact with each other through touch.⁵⁴ A mind is an aggregate of large number of mental particles.

Broad's theory of mind as a substance rests on a very flimsy ground. He believed that a mind as a compound substance of the bodily and psychic factors could adequately explain the interaction of body and mind. This seems to be an apologetic argument. Broad first assumed dogmatically that there was an interaction between body and mind and then he went on to explain the nature of this interaction by conceiving certain factors which perhaps did not exist. For instance, it is not known definitely whether the 'psychic factor' actually exists. Broad himself did not say anything specifically regarding the nature of the 'psychic factor'; on the contrary, he left the idea rather vague. Obviously, then, no sound philosophical theory can be based upon vague and unverified constructs. It is, therefore, doubtful whether Broad's theory of a mind as a compound substance is valid. His view seems to be further questionable when he opined that mind had some kind of structure and shape. If mind has shape and size, then how does it differ from body? Broad tried to describe mind in terms of a material body, and yet he was unsuccessful in his attempt. It is not conceivable how mind is an aggregate of mental states or mental particles.

53 *Op. Cit.*, p. 600.

54 *Op. Cit.*, p. 601.

If a mind is an aggregate of mental particles, then the latter must be externally related. If this is the implication of Broad's theory, then the structure of the mind increases considerably with the accumulation of experience. Broad's entire theory of the mind as a compound substance is based upon a set of unfounded dogmas.

In the preceding pages the views of some of the outstanding philosophers were stated and examined. In the following few pages the views of some of the psychologists on the nature of personality will be briefly discussed. It will be observed that most of the psychologists throw some light on the nature of personality in spite of the fact that they are able to state merely partial truths. It is hoped that psychological investigation into the nature of human behaviour will gradually contribute to the better understanding of the human personality.

Sigmund Freud had a deep insight into human nature and he threw some light on the development of human personality. He maintained that the conscious mind constituted a very small area of the entire mental life, and that the unconscious mind was very deep and extensive in comparison to the conscious mind, which was the repository of all the past experiences from birth onwards. Freud gave the name 'id' to this oldest province of the mind. The id is the primordial personality. It is the reservoir of the libido. It is instinctive and impulsive in its nature. It is dynamic, hedonic and autonomous. It follows the pleasure principle. It follows no external law but its own. It persistently aims at self-gratification. Freud maintained that this oldest aspect of the personality remained most important throughout the lifetime of an individual.⁵⁵ He further observed that an aspect of the id which was in constant contact with the external world underwent a radical change. He pointed out that under the influence of the real external world, an aspect of the id underwent a special development which was known as the 'ego'.⁵⁶ The ego, then, is the product of civilization. It is in

55 *An Outline of Psycho-analysis*, International Journal of Psycho-analysis, 1940, p. 2.

56 *Op. Cit.*, p. 2.

constant touch with the social environment and it tries to abide by the social customs, conventions and regulations. It persistently tries to control its voluntary actions in accordance with the prevailing social conventions. It follows the reality principle. The ego, then, is an artificial aspect of the personality. Its primary aim is to conform to the social standards, and get along peacefully with other members of the society. Ego is a coherent organization of mental processes.⁵⁷ Repression proceeds from the region of the ego. The repressed desires enter into the id and form a part of it. The ego is not sharply separated from the id, but rather it lies on the surface of the latter.

Freud maintained that apart from the id and the ego there was another aspect of the personality which he called the 'super-ego'. The super-ego is an aspect of the personality which grows under prolonged and rigorous parental influence. Freud traced back the origin of the super-ego to the Oedipus complex. The super-ego may be roughly identified with conscience. It enforces severe injunctions against incest. The ego has to satisfy the demands of the id, the super-ego and the environment. The ego is able to maintain a balanced relation with the environment with the help of another principle of the mind called the 'censor'. The censor keeps a rigorous watch over the conscious mind and does not allow any undesirable and unsocial sex desire to enter into it. As soon as indecent desires appear into the conscious mind they are repressed by the censor and sent into the unconscious region. These repressed wishes first of all go into the preconscious level of the mind and make repeated attempts to reappear into the conscious mind and urge for gratification. However, the censor is generally very vigilant and ruthlessly suppresses undesirable sex wishes so that they eventually sink into the deep abyss of the unconscious mind. The repressed wishes do not lose their forces in the unconscious mind, but rather they join many other similar desires already existing there and acquire greater strength. The repressed wishes have a free play in the unconscious mind. The motive force of

57 *Ego and the Id*, London, Hogerth Press, 1947, p. 15.

the repressed desires is reinforced by the Eros or the life instinct. Freud called the whole energy of the Eros the 'libido'. The libido has a somatic source. However, it has also a psychic aspect. Libido can be identified with sex love and it forms the very core of human personality. Freud maintained that all human activities were the expressions of the libido, or the sex energy, that anxiety, a state of helplessness of the ego, arose directly out of the libido;⁵⁸ that ego was the real seat of anxiety because it could estimate situations of danger;⁵⁹ and that anxiety was helplessness of the ego in a traumatic situation.

It must be acknowledged that Freud's theory of personality structure has certain elements of truth and that it produced profound influence on a host of psychologists. Firstly, it seems to be true that a large portion of one's past experiences is somehow stored in one's personality, which are not normally remembered. Secondly, Freud's view seems to be true when he pointed out that the original personality, which he called the 'id', was hedonic, adventurous, rebellious and autonomous in its nature. Freud's conception of the 'id' seems to be the primordial and the natural self, whereas the ego is the artificial personality which has grown out an individual's interaction with society. Thirdly, Freud's view seems to be valid when he pointed out that instincts, impulses and emotions constituted a very important aspect of personality. It appears that most human actions are motivated by impulses and emotions rather than by the intellect. An individual learns to act rationally through deliberate effort. It is obvious, then, that the intellectualistic interpretations of human personality given by earlier psychologists and philosophers were inadequate. Fourthly, there is some truth in Freud's theory of sexuality, repression and anxiety. However, there are certain defects in Freud's theory of the personality structure. One cannot be certain that there are three components in personality, *viz.*, the ego, the id and the super-ego. The super-ego seems to be an ideal rather than a component of personality. Consequently, the inclusion of a sanction as a component of personality seems to

⁵⁸ *The Problem of Anxiety*, New York, Norton & Co., 1936, p. 81.

⁵⁹ *Op. Cit.*, p. 80.

be the result of some confusion, for a sanction or value concept seems to be an expression of personality rather than a part of it. Freud's attempt at a tripartite division of personality seems to be the result of his theoretical bias. Fifthly, Freud's view seems to be questionable when he stated that the influence of the id on personality remains most potent throughout life. If we accept the basic principle that personality is dynamic in its nature, we must also believe in the possible development of the id itself. It is possible that the hedonic impulses of the id may become immensely refined. Sixthly, Freud seems to have overemphasized the concept of repressed sexuality in his theory. The sex motive, no doubt, plays an important part in human behaviour; but it cannot be considered as the sole motive of human behaviour for there are other motives in human personality which are equally important. Moreover, it is questionable whether 'libido' can be considered as a valid construct. Even if it is taken for granted that the concept of 'libido' is a working hypothesis, it cannot be said that 'libido' is identical with sexual energy. Adler maintained that 'libido' contained something more than the sexual motive; he pointed out that 'libido' included striving for superiority or motive of self-assertion. C. G. Jung gave a still broader meaning to the concept 'libido,' and pointed out that 'libido' included the total vital energy of personality. His conception of 'libido' is very similar to Bergson's conception of the *élan vital*. Freud's theory of personality development seems to be inadequate for some of the reasons stated above.

•McDougall was at first greatly influenced by Freud's theory of personality development, but later on he discovered that Freud's doctrine could not satisfactorily account for the integrative processes of a personality.⁶⁰ He discovered that human as well as animal behaviour was fundamentally goal-seeking. He maintained that 'horme' or 'will-to-be' was at the core of human personality. He tried to explain all types of behaviour in terms of some purpose or teleology; and hence, he became the founder of *hormic psychology*.⁶¹ He maintained that all behaviour was

⁶⁰ *An Outline of Abnormal Psychology*, London, Methuen & Co., 1940, p. 534.

⁶¹ Murchison, G., (Ed.), *Psychologies of 1930*, 1930, pp. 3-36.

motivated directly by instincts or indirectly by sentiments. He believed that instincts or propensities formed the innate constitution of an individual which propelled him to act under certain situations. McDougall maintained that all the features of an individual played their part in the integration of personality. Byron's club foot, for instance, played its part in the development of his personality. The various mental qualities also play their part in determining the nature of a personality. McDougall defined personality as the synthetic unity of features and functions of an individual in their intimate interplay.⁶² He described the the different distinguishable parts of an individual as the factors of a personality. However, he pointed out that personality was not a mere totality but an organic whole of parts. McDougall distinguished five different factors of personality, *viz.*, disposition, temperament, temper, character and intellect. He admitted, however, that this classification of factors might not be complete. He thought that there were different departments in the mind with mutually independent systems of sentiments. For instance, the intellectual, ethical, religious sentiments and the like remain mutually independent of one another in a person and influence the individual in different ways at different times. The sentiments are the units of organization on the affective side of the personality. McDougall believed that in the hierarchy of sentiments there was a dominating sentiment called the master sentiment or the sentiment of self-regard. The sentiment of self-regard is at the core of personality and it constitutes the main principle of character. Character is the organized system of sentiments and the strength of the character is determined by the harmony and integration attained by the system of sentiments. It gives self-consistency and autonomy to the personality.

McDougall's theory of personality seems to be an improvement on Freud's theory in the sense that whereas Freud emphasized unconscious motivation, McDougall laid emphasis on conscious purpose in all human behaviour. McDougall also extended the meaning of the term 'libido'; he included the concept

⁶² *Energies of Men*, London, Methuen & Co., 1939, p. 368.

of 'horme' or purposive striving as an important aspect of 'libido'. However, there are a few defects in McDougall's theory. First, it is doubtful whether 'instinct' can be regarded as a valid construct. The theory of instincts is generally held in disrepute in contemporary psychology. Secondly, even though McDougall's theory is more systematic than the earlier theories of sensationism and associationism, he could not abandon some of the terms which had atomistic significance to some extent. For instance, McDougall very frequently used the expression 'parts' to describe the various aspects of personality. Sometimes he pointed out that there was something like isolated compartments in a system of sentiments so that one department remained unaffected by others. This form of expression seems to be unsatisfactory for if one accepts the view that the law of causation has universal application then one must believe that one sentiment will necessarily influence the other sentiments in some way or the other. For instance, if an individual has a religious sentiment in the system of his sentiments, the former will certainly influence the entire configuration of sentiments to some extent at least. Thirdly, McDougall left the concept of personality as a synthetic unity rather vague. He did not say clearly how the synthetic unity or the organic unity was something more than totality of 'parts'. He did not also give sufficient evidence to prove that the sentiment of self-regard was at the core of personality.

J. B. Watson attached no importance to McDougall's hormic psychology and gave a behaviouristic interpretation of human personality. He ruled out the idealistic interpretation of personality and explained human behaviour in a purely objective way. He pointed out that psychology could not deal with intangible concepts like 'consciousness', 'mind' and the like. He regarded psychology as a branch of biological science.⁶³ He compared a human organism to a machine which was ready to run. He believed that a human personality was an organic machine. He maintained that individual differences were due to the fact that unlearned activities were subjected to 'conditioning'

⁶³ *Behaviour*, New York, Henry Holt & Co., 1914, p. 8.

soon after birth; and that, consequently, conditioned response was the basis of personality. According to him, personality is built up through the formation of habit systems which in their turn are due to systematic conditioning. Thus, certain habit systems may be fixed in a personality through incessant repetition of the original stimuli. There is expansion of habit system with the increase of experience. It is possible to have a cross section of the activity stream of a person at any age. The cross section of an individual reveals what a human machine is good for. Future predictions can be made on the basis of the present cross section of a personality. Watson observed that a survey of the stream of human activities gave an objective formulation of a personality. He defined personality as the sum of activities that could be studied through actual observation of behaviour.⁶⁴ He pointed out that an assessment of a personality consisted in the plotting of a cross section of the activity stream. He observed that sometimes a certain habit system might dominate over other habit systems in a personality. He also found that personality changes were most rapid during youth when the habit patterns were in the process of formation.⁶⁵ However, personality changes are rather slow when an individual reaches the adult stage when the habit patterns are fixed in the personality. Watson maintained that the personality of an individual was greatly determined by the environmental influences. He claimed that any child could be turned into a poet, or a painter or a musician if he was trained in well-equipped institutions from the very beginning.⁶⁶ He, therefore, became an advocate of an extreme form of environmentalism.

Watson made an attempt to give a purely objective study of human personality; but in trying to do that he played the part of an over-enthusiast; and naturally, his view suffers from certain hasty generalizations which are generally found in most of the youthful and immature doctrines. It seems that he made a mistake in trying to eliminate consciousness and other mental

⁶⁴ *Behaviourism*, New York, W. W. Norton & Co., 1930 p. 274.

⁶⁵ *Op. Cit.*, p. 278.

⁶⁶ *New Generation*, p. 72.

processes from psychology. It cannot be denied that consciousness does exist and that people actually experience it. The behaviour of two individuals may appear to be similar on casual observation; but if their mental processes are taken into consideration their behaviours are found to be fundamentally different. Watson was content to note only the superficial behaviour of individuals, but in trying to do that he missed the subtle and intricate workings of the mind. The behaviour of an individual is not as simple as that of an automobile. It is true that the behaviour of a human individual may be roughly described with the analogy of an automaton; but this analogical inference is extremely inadequate for a human organism and an automaton are different from each other to a very great extent. Consequently, by following the Watsonian analysis one may know only the superficial working of the human personality but not its fundamental nature. Behaviour, then, is not a mere sensory-motor affair but it is something more than that for it involves some motive or purpose. Behaviour is not a mere series of reflexes for there is unity of purpose in behaviour which is lacking in a reflex or a bundle of reflexes. Watson's view suffers from defects of over-simplification. It does not seem to be possible to get a complete picture of a personality by merely plotting the activity stream of an individual. Further, it does not seem to be possible to make precise prediction regarding the future behaviour pattern of an individual on the basis of the analysis of his present habit systems. Watson seems to ignore the unpredictable aspect of a personality. The romantic and the creative nature of an individual always baffles any precise prediction of his future behaviour patterns. Moreover, Watson seems to have overemphasized the influence of the environment in shaping the personality of an individual. It is questionable how far Watson could justify his claim that he could turn any child into a poet or a painter through proper 'conditioning'. It seems that there is an aspect in a personality which retains uniqueness at all stages of its development and refuses to be trained by any amount of 'conditioning'. Watson's theory of environmentalism, therefore, seems to be only half truth.

Koffka, one of the pioneers of Gestalt Psychology, refused

to accept the position of behaviorism. He thought that a complex behaviour could not be explained as a mere sum of elementary reflexes. Gestalt psychology was opposed to behaviourism because the emphasis of the former was on the concept of the 'whole' or 'configuration'. Koffka pointed out that behaviorism made a mistake by completely dropping out the concepts of 'consciousness' and 'mind' from the description of human personality. He, on the contrary, asserted that consciousness did exist for it was actually experienced by persons.⁶⁷ He maintained that the Ego was the object of direct knowledge. He equated the Ego with the *known*. He maintained that the Ego was a part of the social structure and its nature was determined to a great extent by the latter. He believed that the influence of the social structure was of paramount importance for the development of the Ego.⁶⁸ According to him, an Ego is generally described in the light of its cultural background. It is constantly surrounded by the social field. Behaviour presupposes not only an environment but also an Ego. An individual develops his personality as a member of the social group. The Ego acts within its field. The limits of the Ego may vary from person to person, and even with the same individual under different situations. For instance, the Ego of a lady may be touched if her son is insulted or looked down upon by others. The son, therefore, forms the part of the mother's Ego. There are situations which contract the boundaries of the Ego, for instance, in severe frustration; and there are certain occasions when the boundary of the Ego expands, as, for instance, in a state of emotional ecstasy. The Ego expands by sudden jumps, for instance, from skin to the clothes, from clothes to families, and so on. The Ego is an object in a field.⁶⁹ It is in constant interaction with the field. The Ego itself is a particular field which is in interaction with the rest of the field. It is the sub-system of a larger field.⁷⁰ The states of the Ego are field events. The Ego grows

67 *The Growth of the Mind*, London, Kegan Paul, Trench Trubner & Co., 1931, p. 17.

68 *Principles of Gestalt Psychology*, New York, Harcourt Brace & Co., 1935, p. 676.

69 *Op. Cit.*, p. 321.

70 *Op. Cit.*, p. 330.

and develops by maintaining itself in a flux of psycho-physical field. Koffka did not analyse human behaviour into parts or functions. But, on the contrary, he employed the basic principles of Gestalt theory for the study of personality. He explained personality in terms of 'organization'. The Ego is responsible for the permanence and continuity of the 'mental' phenomena. Koffka did not identify the continuity of the mind with memory.

The special contribution of Koffka to a theory of personality lies in the fact that he conceived personality as an organized whole. He, therefore, suggested that it was not possible to get a complete picture of personality by listening the various personality traits. He also made an important observation that it was not possible to have a complete picture of a personality if consciousness and other mental contents are totally dropped from the description of personality. However, Koffka's view is open to certain criticisms. It appears from a careful examination of Koffka's theory that he did not clearly understand the nature of personality. He admitted that personality was not a mere sum of mental traits, but that it was an organized whole. But Koffka did not specify the nature of this organized whole. His conception of the Ego is rather confused and vague. He maintained that the Ego included many other things over and above the centre of experience. He pointed out, for instance, that clothes, friends or close relatives might form a part of the Ego. It seems that Koffka confused the personality with certain objects in which personality has interest. An individual may have interest in his garments, friends, or children, but the latter do not form a part of his personality. Consequently, Koffka's suggestion that the boundary of the Ego might contract or expand does not seem to be sound. He seems to have confused the Ego with the Ego's objects of interest which obviously are not identical or mutually interchangeable. It is evident, then, that a son is not a part of his mother's Ego for there can be no conflux of personalities. Each personality retains its uniqueness and identity in the midst of changes. Koffka's theory of the Ego, therefore, seems to be unsatisfactory.

G. W. Allport defined personality as a unique and distinctive individual. He emphasized the aspect of dynamic organization

of all psychophysical systems in an individual that determined his unique adjustment to his environment.⁷¹ A person is a unique organization of all his activities and he expresses his uniqueness through his behaviour and style. It is evident, then, that Allport's definition of personality contains all the important features of a psycho-physical organism which is in constant interaction with the environment. His doctrine incorporates all the essential features of most of the important definitions of personality. He maintained that only the rudiments of the most important features of personality are given at birth, and, consequently, an infant does not possess a personality in the strict sense of the term. However, an individual comes to possess a fully developed personality due to his interaction with his social environment. The genes which an individual inherits from his parents merely supply one set of conditions for the development of personality. The other set of conditions for the development of personality is provided by the environment. Heredity and environment, then, are equally important for the development of a personality. There is development of a personality due to the inherent maturational capacity of the various features in an individual. However, the inherited features cannot be regarded as mutually independent units of a personality. Allport rejected the doctrine of specific traits of a personality. He believed that goals and purposes were not inherited by an individual. The uniqueness of a personality is determined to a very great extent by the impact of culture on an individual. An individual can be regarded as a product of environmental forces in one sense. However, he behaves in his own unique way throughout his life. Consequently, a precise scientific analysis of a human personality is impossible because each individual is distinctive and unique. It is impossible to abstract a generalized human behaviour from a population of infinite variety of personalities. The nature of a unique individual cannot be assessed adequately by applying the simple formulae derived from the 'generalized mind' which is strictly speaking a mythical conception. Each individual possesses a very high degree

⁷¹ *Personality: A Psychological Interpretation*, London, Constable & Co., 1949, p. 48.

of complex organization comprising his distinctive habits of thought and expression. Personality, then, is a complex organization of the entire system of habits, interests, attitudes, thoughts and the like in an individual.⁷² This unique organization in an individual is relatively enduring.

The merit of Allport's theory of personality lies in the fact that he incorporated the essential features of some of the most important theories of personality. Allport was right in particularly emphasizing the uniqueness, dynamic organization of psycho-physical systems and relative permanence of an individual. However, in spite of the fact that he incorporated the most important contributions of the various theories of personality in his own view, he remained rather vague on the formulation of his doctrine of dynamic organization. He did not say anything specifically regarding the organizing principle of the various psycho-physical features of a personality. He did not say whether the organizing principle is something more than a mere sum of the various psycho-physical features of a personality. The fact of organization presupposes some organizing principle for otherwise the various features of a personality cannot organize themselves spontaneously. Allport mentioned that some form of teleology was involved in behaviour, but he did not specify the nature of teleology. He avoided the theoretical questions regarding the nature of personality and the organizing principle.

O. H. Mowrer and C. Kluckhohn suggested a 'dynamic theory of personality' in which they incorporated the basic concepts from the fields of psycho-analysis, social anthropology and psychology of learning. They believed that there was perhaps some basic unity among the three relatively independent fields of inquiry. Consequently, a satisfactory theory of personality can be formulated with the help of the concepts from the three different fields of inquiry. These three independent disciplines agree on the following principles: (i) All behaviour is functional; (ii) Behaviour involves conflict; (iii) Behaviour can be understood only in relation to a field or context; (iv) All

⁷² *Op. Cit.*, p. 24.

organisms tend to preserve a state of maximal integration or internal consistency.⁷³ Mowrer and Kluckhohn suggested that it was possible to have a reconciliation between the mechanistic and purposivistic theories through the formulation of a complex formula of behaviour which would satisfy the basic requirements of both the views. This comprehensive formula may be stated as follows: Stimulus—Movement—Effects. This formula represents the view of the 'dynamists'. Certain writers maintained that consciousness should be included as an important aspect of a behavioural process. Mowrer and Kluckhohn maintained that the term 'consciousness' could be avoided in a dynamic theory of personality. However, they admitted that certain 'symbolic processes', such as, 'reasoning', 'planning', 'imagining' etc. were involved in behaviour.⁷⁴ They pointed out that certain symbolic processes intervened between stimulation and movement in the dynamic formula of behaviour. They employed the term 'personality' to mean an individual as an organized, adjusting, behaving entity.⁷⁵

Mowrer and Kluckhohn did a remarkable job in trying to present a dynamic theory of personality by incorporating the concepts from the fields of psycho-analysis, social anthropology, and the psychology of learning. A similar attempt was made by J. H. Masserman who tried to show the 'essential unity' of biology, psychology, psychiatry and psycho-analysis.⁷⁶ Such attempts to find some harmony among the different fields of knowledge are quite praiseworthy. However, it appears from a close examination of the theories of most of the psychologists that they are busy with the description of behaviour rather than with the nature of personality or the principle which organizes the various behaviour tendencies. In other words, in trying to make a strictly objective study of personality, the psychologists

73 Mowrer, O. H. and Kluckhohn, C., 'The Dynamic Theory of Personality', *Personality and Behaviour Disorders*, Edited by J. McV. Hunt, New York, The Ronald Press, 1944, Vol. I, p. 69.

74 *Op. Cit.*, p. 70.

75 *Op. Cit.*, p. 77.

76 'Psychobiologic determinisms in Behaviour', *Psychiatry*, 1942, 5, pp. 341-47.

generally fail to comprehend the fundamental nature of personality. There are certain aspects of personality which cannot be adequately studied through purely operational methods. It is due to the same behaviouristic bias that Mowrer and Kluckhohn tried to explain the mental processes as 'symbolic processes'. It may be true that symbolic processes are involved in behaviour, but they cannot replace the mental processes. The symbolic processes are due to the operation of the mind. They cannot function by themselves. They function only due to the operation of the mind. Therefore, the definition of personality given by Mowrer and Kluckhohn seems to be inadequate.

In the preceding pages a few outstanding psychological theories of personality have been briefly stated and examined. In the following few pages a brief reference will be made to the anthropological and cultural interpretation of personality. The anthropological approach to the problem of personality has a history of its own. Important work has been done in this area by F. Boas, M. Malinowski, A. R. Radcliffe-Brown, C. G. Seligman and others. It is recognized by most of the workers in this field that culture is one of the most important determinants of personality, though it cannot be regarded as the only determinant of it. In connection with this topic the view of Ralph Linton will be briefly discussed here.

Ralph Linton maintained that personalities, societies and cultures constituted an organized whole in which the whole was more important than its constituent parts. Till recently the main scientific trend has been to study of individuals rather than cultural patterns. The study of the cultural patterns is more or less a recent attempt compared to other such scientific enterprises. However, since an individual is a unit of a social structure, he is certainly the logical starting point for any investigation of larger organizations. Linton pointed out that a particular culture provided the members of its society with certain guiding principles for practically all affairs of life. Neither an individual nor a society can function effectively without the guiding principles of a particular cultural pattern. In fact, the structure of a particular society is itself a matter of culture. Linton defined culture as the results of learned behaviour whose component elements

were shared by the members of a society.⁷⁷ A culture, then, is the sum-total of the behaviour patterns of the members of a society in so far as those behaviour patterns are learned and shared. The bulk of a personality is constituted by the system of habits shared by an individual through social contact. Linton maintained that the personality type of a society was determined by its cultural pattern. It is true that there are certain exceptional instances in which individuals are not profoundly influenced by the cultural norm. However, Linton observed that the average and the normal individuals of a particular society were determined by the cultural norm of their society.⁷⁸

It is universally acknowledged that the cultural norm of a particular society has some influence in determining the behaviour pattern of an individual. Linton did not add anything new to this universally acknowledged fact. His view of the cultural influence on personality is rather naïve and commonplace. He did not work out his theory of personality in detail. He described a personality as a configuration.⁷⁹ But he did not take pains to explain the nature of this configuration. He left his theory of personality rather vague. Besides this, the term 'configuration' is not a very happy expression for it conveys the idea that the structure of personality is static rather than dynamic. It conveys the idea of a fixed pattern or structure, rather than a dynamic organization. But since personality is a dynamic organization the term 'configuration' does not suitably express the nature of personality. Linton pointed out that the majority of normal persons in a society acted according to their cultural norm. It seems perfectly possible to conceive of a society in which individuals may act according to their own cultural norms rather than align themselves with their social standards. It seems to be possible in those societies in which individuals have creative personalities and enjoy maximum possible freedom. That would be a culture of infinite variety rather than of uniformity. The definition of culture suggested by Linton seems to be inadequate.

77 *The Cultural Background of Personality*, London, Kegan Paul, Trench Trubner & Co., 1947, p. 21.

78 *Op. Cit.*, p. 98.

79 *Op. Cit.*, p. 98.

Culture is not necessarily the sum-total of behaviours of the members of a society in so far as their behaviours are 'shared'. It is not necessary that every society in which there is uniformity of behaviour of its members has some kind of culture. A criminal tribe cannot be said to have a culture simply because there is some sort of uniformity of behaviour of its members. A society can be said to have some kind of culture only when the values created by some of its members satisfy some of the essential criteria of culture, such as, universality, novelty, originality, beauty and the like. Linton's definition of personality and culture, therefore, seems to be inadequate.

The nature of human personality has been discussed so far from the philosophical, psychological and cultural points of view. It is necessary here to mention briefly the physiological aspects of a personality in order to make our discussion of personality more or less complete. Philosophers and scientists knew it from the dawn of human history that there was a very close relation between body and mind, but the exact relation between the two was not clearly known. Modern developments in human physiology has thrown sufficient light on the nature of the relation between physiological and mental processes that take place in a personality. The physiological processes play a major part in integrating the various dynamic processes of a personality.

The most important integrating system of a human organism is the nervous system. The nervous system is an elaborate organization of innumerable cellular units and network of nerves and nerve fibres. It is the function of the nervous system to control the various physiological processes according to the needs of an organism. The brain is the most important portion of the nervous system. The main function of the nervous system is to co-ordinate the behaviour pattern of an individual. It is found that there is some kind of correlation between the weight of the brain and the adaptive abilities of an individual. It is observed that those living organisms which have larger cerebral structures in proportion to their organisms have greater adaptive ability than those living organisms which have smaller cerebral structures. However, there is no definite relation between the weight of the brain and adaptive abilities so far as human beings are

concerned because no such invariable correlation is established between the size of the brain and intelligent adaptive behaviour. It seems that the behaviour patterns of human individuals depend not only upon the size of the brain, but also upon the quality and nature of the memory traces in the brain. In other words, the behaviour pattern of an individual depends to a very great extent upon the complexity of his cerebral organization. However, in certain pathological cases the cerebral organization is abnormally small in size and underdeveloped which is technically known as 'microcephaly'.⁸⁰ There are certain other types of anomalies of the brain, such as, hydrocephaly and encephalocoele.

It was believed by a large number of physiological psychologists that the various physiological and mental functions were located in the different parts of the brain. There are various associative areas in the brain which control and co-ordinate the various types of behaviour. The cerebrum in human individuals is the neural basis for all kinds of neural behaviour. However, the details of the mechanism of the cerebral activity are not yet fully known. It is quite possible that the behaviour pattern of an individual does not depend upon any particular area of the cortex, but upon the total quantity and complexity of the cerebral organization. In recent times the hypothesis of brain being divided into various areas and controlling different mental processes, such as, perception, imagination, thinking and the like, has lost its scientific significance and it is believed that the different areas of the brain work together in the same mental process.⁸¹ It does not mean, however, that the various areas of the brain have no significance at all in controlling and co-ordinating certain specific types of behaviour. It was found by W. Penfield and J. Evans that if there was loss of the right frontal lobe of the brain it produced the defect of the power of initiative and planned activity.⁸² In another study R. M. Brickner found that

⁸⁰ Arey, L. B., *Developmental Anatomy*, Philadelphia, W. B. Saunders Co., 1954, p. 499.

⁸¹ Crafts, L. W., and others, *Recent Experiments in Psychology*, New York, McGraw-Hill Book Co., 1950, p. 171.

⁸² 'The Frontal Lobe in Man: A Clinical Study of Maximum Removals', *Brain*, 1935, 58, p. 131.

the removal of the frontal lobe resulted in the loss of ability to transform ideas and experiences into meaningful activity.⁸³ G. D. Stoddard, however, remarked that the common belief that the frontal lobe was the 'planning lobe' was only a half truth. This is also true of other lobes of the brain. Stoddard pointed out that the various lobes of the brain had no meaning apart from their relation to the whole of the nervous system. A particular lobe of the brain cannot function alone apart from its relation to the other parts of the brain. Nevertheless, Stoddard admitted that the frontal lobe played a major part in controlling the mental behaviour of human individuals.⁸⁴ W. Penfield and T. C. Erickson pointed out that the functional localizations existed in the brain not in the form of 'centres' or 'points', but rather in the form of 'arcs' or 'patterns' which extended to the various regions of the brain.⁸⁵ There are various association neurones in the brain which connect and integrate the various neural impulses from the different parts of an organism. The various neural connections in the brain are not fixed and unmodifiable, but rather they can be changed and modified during the lifetime of an individual. It is found that when the associative areas connected with certain types of behaviour are lost in both the hemispheres of the brain, the ability to perform certain types of behaviour is completely lost. However, it is found that even if there is destruction of the association areas in both hemispheres of the frontal lobe there is weakness of memory of recent events, but there is no loss of memory of the childhood period of an individual. This phenomenon seems to have an important theoretical significance. It indicates that the memory traces of the different periods of childhood persist in the innermost layers of the cerebral organization. It is also quite likely that the various possible experiences and behavioural tendencies of a family or a race are transmitted to offspring through heredity.

The chemical analysis of the brain has thrown sufficient light

83 *The Intellectual Functions of the Frontal Lobes*, New York, The Macmillan Co., 1936, p. 39.

84 *The Meaning of Intelligence*, New York, The Macmillan Co., 1956, p. 66.

85 *Epilepsy and Cerebral Localizations*, Baltimore, Thomas, 1941, p. 163.

on the nature of the correlation between brain and the various types of behaviour in an individual. It was observed by Hydén and Hartelius that in certain cases of personality disorders the protein producing systems were poorly developed. It is obvious, then, that there is a definite correlation between the chemical composition of the cerebral organization and the behaviour pattern of an individual. The brain cells are the most valuable of all the cells of the entire organism for whereas the cells of the body have the property of renewing themselves, the brain cells do not have the property of renewing themselves.⁸⁶ The brain proteins have the capacity for enormous metabolism which is demonstrated by the fact that the brain functions almost continuously throughout day and night. The amount of oxygen consumed by the brain for metabolism is 10 to 20 times more than the amount of oxygen required by the muscular system of an organism.⁸⁷ It is evident, then, that a major portion of the total supply of oxygen in an organism is consumed by the brain. It is found that if the supply of oxygen to the brain is cut off for a few minutes it may result in irreparable damage to the cerebral mechanism. However, compared to the brain any other part of the body can remain uninjured if the supply of oxygen is cut off from those parts of the body. It shows, therefore, that the brain is the most subtle and the most important part of the whole organism the main function of which is to integrate the physiological and mental functions in an organism.

The nature and the functions of the brain can also be studied from the standpoint of physics. It was demonstrated by Berger in 1929 that the electrical activity could be objectively studied in the human brain. Many investigations have been made in the field of electroencephalography or the method of recording electrical potentials from the brain since the publication of Berger's results, but the fundamental nature of the brain potentials still remains unknown to a very great extent. Electroencephalography of human subjects is mainly concerned with the

⁸⁶ Riebeling, C., 'The Chemical Composition of the Human Brain', *Universitas*, 1957, Vol. I, 3, p. 289.

⁸⁷ *Op. Cit.*, p. 292.

investigation of the various types of relations between certain measurable aspects of electrical phenomena and the different types of physiological and mental variables. Investigations in the field of electroencephalography has revealed a very important fact which seems to have a great theoretical value, particularly from our philosophical standpoint. It is recorded through electroencephalogram that brain waves of human subjects have a self-initiated and spontaneous nature, and they are manifested in rhythmic flow. It was observed by Adrian and his co-workers that rhythmic patterns were not only manifested by the human brain, but the rhythmic waves were also manifested by the isolated brain stems of certain fishes and insects, and those rhythmic waves could be recorded through electroencephalography. They found that such rhythmic brain waves were autonomous in their origin for they took place without any sensory impulses. The spontaneous nature of the brain potentials seemed to indicate that the rhythmic patterns were perhaps associated with metabolic processes of nerve cells in relation to their chemical environment. Rhythmic activity is a unique characteristic of the nervous system. Some of the most conspicuous brain waves occur when a person is asleep.⁸⁸ The recordings of the brain waves show that there is a continuous shift of the brain activity from one state to another. There may be sudden changes in the brain waves due to the effect of light, sound or mechanical disturbances of some kind from the environment. But shifts in the brain waves may take place even without any stimuli from the environment. It is obvious from this study that certain groups of cells of the brain which produce brain waves are partially autonomous and self-governed.⁸⁹

Besides the nervous system there are other systems in an organism which play their respective parts in the dynamic organization of a personality. A very brief reference will be made here to some of the organic systems which play their part

88 Harvey, E. N., 'Electrical Potentials of the Human Brain', *Science in Progress*, New Haven, Yale University Press, 1939, First Series, p. 247.

89 Lindsley, D. B., 'Physiological Psychology', *Fields of Psychology*, Edited by R. H. Seashore, New York, Henry Holt & Co., 1949, p. 153.

in the organization of a personality. The endocrine system is one of the systems to which a brief reference will be made here. The human organism is endowed with a set of endocrine or ductless glands, viz., Pineal, Pituitary, Thyroids, Parathyroids, Thymus, Pancreas, Adrenals, and Gonads, the chemical secretions of which play an important part in the regulation of the various types of physiological processes, such as metabolism, growth, reproduction etc. The unity and integration of an organism is to a very great extent due to subtle chemical interactions in the internal environment of an organism. Each one of the endocrine glands has a very close relation with the rest of the endocrine system and the normal health of an organism depends to a very great extent upon satisfactory endocrine balance.⁹⁰ The chemical secretions of endocrine glands which are technically known as 'hormones' act as regulators of metabolic processes, reproductive activities and the like. The chemical substances of endocrine glands enable an organism to pass unharmed through periods of stress and strain offered by occasional fluctuations of the environmental conditions.⁹¹ Hormones of endocrine glands behave like enzymes or co-enzymes and they produce profound effects upon the physiological processes of an organism. If somehow the endocrine balance is slightly upset the physiological equilibrium of personality is disturbed and thereby causing behaviour disorders. For instance, if the thyroids underfunction in an individual his physical growth may be retarded accompanied by deficiency of intelligence, emotional blankness, etc. Likewise, deficiency and excessive activity of other glands also produce various types of symptoms of diseased personality. It is evident, then, that the endocrine system plays an important part in maintaining the chemical balance of an organism.

A passing reference may also be made to the autonomic system which gives rise to emotional experience. W. B. Cannon pointed out that the thalamus activated the sympathetic system which produced various visceral changes associated with emotional

90. Zuckerman, S. 'Ductless Glands'. *Textbook of Human Anatomy*, Edited by W. J. Hamilton, London, Macmillan Co., 1956, p. 645.

91. Gortner, Jr., R. A. and Gortner, W. A., *Outlines of Biochemistry*, New York, John Wiley & Sons, 1950, p. 948.

experiences. In emotional situations the thalamus discharges its specific pattern upward to the cortex resulting in emotional awareness and downward to the periphery producing emotional expression. Later investigations showed that the function of the hypothalamus is necessary for integrated emotional expression. A more thorough investigation would reveal that the cortex, the thalamus, the hypothalamus, automatic system and the endocrine system all play their respective parts in emotional experience and expression.

Finally, a brief reference must be made to the rôle of heredity in determining the nature of personality. It is accepted by almost all psychologists and physiologists that personality is the joint product of heredity and environment. There are, however, certain writers who either emphasize too much the rôle of heredity or the environment in determining the nature of personality. H. S. Jennings laid too much emphasis on the importance of heredity in determining the nature of personality. He believed that there was one gene for each stature, complexion, normal-mindedness, feeble-mindedness etc. in an individual. According to Jennings, every individual is born in this world with fixed and predetermined characteristics. The environment, on the other hand, might either prevent or permit the development of hereditary characters. Jennings opined that heredity was everything and the rôle of environment was almost nothing in determining the nature of personality.⁹² Jennings went further and pointed out that temperament, behaviour, laziness, stupidity etc. were all determined by genes.⁹³ It seems that Jennings over-emphasized the influence of genes in determining the various personality traits of an individual. G. D. Stoddard vehemently criticised the theory of Jennings and remarked that the various personality traits of an individual were not influenced by their corresponding genes. Stoddard pointed out that the characteristics of a personality were no more present in the genes than were the characteristics of an auto-

92 *Prometheus or Biology and the Advancement of Man*, New York, E. P. Dutton & Co., 1925, p. 86.

93 *The Biological Basis of Human Nature*, New York, W. W. Norton & Co., 1930, p. 17.

mobile in the metallic ores out of which it was manufactured.⁹⁴ We think that Stoddard gave a wrong analogy of ores and the automobile in describing the nature of the relation between genes and the various characteristics of a personality. Genes are not like a mass of chemicals as Stoddard assumed, but rather they are a special type of chemicals with the property of self-duplication by means of which they retain their respective identities. It is, therefore, quite possible that a particular gene or a number of genes might influence a particular trait of an individual. We do not intend to suggest here that personality traits are inherited through heredity, but we merely suggest here that the various possibilities of personality traits are inherited through heredity. The various possible organizations of genetic materials may determine the organization of a personality. However, the various influences of the environment on the personality cannot be ignored. The environmental influences enter into the fabric of a personality, so to say. There are certain psychologists who believe that the nature of personality was determined mostly by the environmental influences. We think that those theories which have a tendency to overemphasize the importance of environmental influences in determining the nature of a personality are one-sided in their nature. It seems that the theory suggested by R. S. Woodworth and D. G. Marquis was balanced, who pointed out that the relation between heredity and environment in determining the nature of a personality was not like addition, but more like multiplication.⁹⁵

It is quite clear from this brief description of human personality from the physiological point of view that an individual is a most complex organization of innumerable organic systems which are harmoniously integrated. It may be mentioned here that a personality is not like an automaton, but rather it is more complicated and subtle than an artificial automaton. A personality is a dynamic organization which absorbs within itself all necessary environmental influences which are necessary for its existence and development.

A brief survey of the nature of human personality was made

⁹⁴ *The Meaning of Intelligence*, pp. 27-29.

⁹⁵ *Psychology*, London, Methuen & Co., 1949, p. 154.

in the preceding few pages from the philosophical, psychological, cultural and physiological points of view. There are other possible points of view from which the nature of human personality could be discussed; but those points of view were intentionally left out in order to keep the chapter within balanced limits. It was found in connection with the discussion of the theories of personality that in spite of their inadequacies each point of view threw some light on the nature of human personality. Each point of view had its unique contribution to make for a clear understanding of the nature of human personality. However, each one of these standpoints may be regarded as inadequate and incomplete in the sense that each one of these points of view generally ignores the importance and merits of other points of view. From the standpoint of our philosophical theory the different points of view that were discussed in this chapter have their respective significance in presenting a more or less comprehensive and consistent view of personality. Each point of view in the theory of personality has significance because each one of them describes a particular aspect of personality and all those aspects form an integrated whole. It is obvious, then, that any theory which aspires to give a comprehensive and consistent view of personality cannot afford to neglect any point of view which throws some light on the nature of human personality.

The theory of personality has the greatest significance from our philosophical standpoint. We get a clue to the nature of reality through a careful and comprehensive study of the nature of human personality. We get glimpses of the fundamental constituents of reality and the laws of their behaviour through the various processes of knowing. Obviously, reference is here made not merely to the various mental processes of knowing, such as, perception, reasoning, intuition and the like, but also to the various types of operational methods of knowing. It is true that in recent times the various scientific devices can objectively record the behaviour of the various phenomena of Nature and thereby the different devices of senses experience can be completely replaced. However, in spite of the fact that scientific instruments for objectively measuring the behaviour of the various phenomena of Nature can completely replace the methods

of knowing through the sense organs, the importance of human personality cannot be minimized thereby in the least. Scientific instruments can only record the existence of the fundamental constituents of the various phenomena of Nature and their modes of behaviour, but they cannot interpret the philosophical implications of those constituents and the meanings of their modes of behaviour. It is the personality which understands and interprets the philosophical implications of the fundamental constituents of the various phenomena of Nature and the meanings of their modes of behaviour. It is the personality which discovers the various laws and sub-laws in the fundamental constituents of the various phenomena of Nature. It is the personality which tries to discover the link between the different laws of Nature in order to find out the fundamental unity between the different laws. It is the personality which makes persistent attempts to explain all laws of Nature by one comprehensive law in order to give a unified world-view. That is the reason why there is the prime importance of arriving at a comprehensive theory of personality for getting an adequate knowledge of the nature of reality.

The previous two chapters were mainly concerned with the analysis and interpretation of the nature of matter and living phenomena. Interpretation of the living and the non-living phenomena would be impossible without the processes of knowing by the personality. Sciences are mainly concerned with the analysis of the fundamental constituents of the dynamic organizations in the various phenomena of Nature. Axiology, on the other hand, is primarily concerned with the clear and comprehensive appreciation of the meanings of the dynamic organizations in the various phenomena of Nature including the value creations of human beings. Philosophy tries to comprehend the ultimate constituents of reality and their dynamic organizations all forming an integrated whole, and the meaning of each dynamic organization in relation to the meaning of the whole reality. It tries to have comprehensive knowledge of both the dynamic organizations and their respective meanings. It encompasses within its range the findings of sciences and axiology. In fact, it is also the ultimate aim of sciences and

axiology. In a broad sense, therefore, philosophy may be defined as the study of the ultimate constituents of the various phenomena of Nature and their dynamic organizations together with the meaning of the world in which we live and all other possible worlds in reality of which our world is an integral part, and the Absolute which comprehends reality and eternally creates cosmic values therein. There is, we believe, no ambiguity in this definition of philosophy. We are not speaking here of any trans-empirical reality, but rather we are speaking of our world which is quite intelligible. The observable aspect of our world is Nature which is manifest with all its aspects and states before the manifold media of knowledge. The code scripts of reality are writ large in the various phenomena of Nature, and it is the business of philosophy to rightly interpret the meanings of those code scripts with the help of the results of sciences and to correlate those meanings with the organization of our world and reality so that the meaning of reality becomes intelligible. The difference between sciences and philosophy consists in the fact that whereas sciences are concerned with the analysis and interpretation of the dynamic organizations in the various phenomena of Nature, philosophy is mainly concerned with the clear comprehension of the integrated relation of all possible dynamic organizations together with the right interpretation of the meaning of the dynamic reality. It is clear from the discussion so far that whether interpretations of the various phenomena of Nature are made through the media of sciences or philosophy it is the personality which makes all interpretations.

The fact that the rôle of personality is the greatest in the interpretation of reality clearly shows that Nature and reality are not far removed from the knowing processes of a personality, but rather there is continuity between the various processes of knowledge and reality. From our philosophical standpoint ontology flows into epistemology and constitutes an aspect thereof. Reality is revealed to human personality through the various processes of knowledge. Even if the media of knowledge are not adequate and comprehensive certain aspects of reality at least are revealed through the epistemological media. The epistemological processes express, however partially, certain

aspects of reality. Continuity that exists between knowledge and reality clearly indicates that there is no sharp line of demarcation between ontology and epistemology. Processes of knowledge penetrate into reality, and reality is revealed through the various knowing processes themselves. There is ingression of reality into personality through the various media of knowledge. For example, light waves proceed from a source of light and are received by the visual organs of a person where a complicated process of physico-chemical reactions take place giving rise to the perception of light. Personality, on the other hand, influences reality, however minutely, with its media of knowledge including the operational methods. Personality does influence the environment, no matter how trivial that influence is. For instance, a great person, such as, a saint, a poet, a philosopher, or a scientist, does influence the environment through his value creations; even the immediate environment that environs a great person may get haloed by his mere presence. The example cited here may appear to be too poetical to certain critical readers. But what has been said here is corroborated also by the findings of contemporary physics. According to most of the contemporary physicists the physical phenomena do not unfold themselves according to immutable laws in the presence of a passive observer, but an observer definitely affects the nature of behaviour of physical phenomena by setting up certain types of experimental devices. An observer determines the nature of behaviour of physical phenomena by designing experimental apparatus in certain specific ways. It is evident, then, that there is a two-way process between reality and epistemology. On the one hand, the various processes of knowledge spread out of personality and get enmeshed into the complex organization of reality, and certain aspects of reality, on the other hand, percolate through the various media of knowledge, as it were, and enter into the texture of personality. Thus, there is a continuity between knower, knowledge and the known;—the one flows into the other without creating abrupt gaps or sharp lines of demarcations. Knowledge, knower and the known constitute the different aspects of the dynamic structure of reality. Right processes of knowledge deepen the continuity between personality and reality.

It may be mentioned here briefly that there is confluence not merely of ontology and epistemology, but there is also confluence of axiology with ontology and epistemology. Axiology becomes clearly manifest when ontology and epistemology flows into each other. Axiology is primarily concerned with the discovery of meaning in the various aspects of reality as they are partially revealed through the various phenomena of Nature. The aim of axiology consists in the discovery of meaning in the various dynamic organizations of the different phenomena of Nature and of reality and their laws of behaviour as they are revealed through the diverse epistemological processes. The discovery of meaning in the various dynamic organizations of reality presupposes a prior confluence of ontology and epistemology as a necessary pre-requisite of axiological processes. It may be pointed out here that the term 'axiology' has been used in our philosophical theory not only in a restricted sense, but also in a very broad sense. From our philosophical standpoint, therefore, axiology is concerned not merely with the interpretation of the so-called higher values of life, but it is concerned also with the discovery of meaning in all possible dynamic organizations of reality. The aim of axiology consists in the discovery of right principles for the appreciation of meanings in the different types of values in reality. In axiology there is focalization of certain types of epistemological processes on the meaning aspects of the various phenomena of Nature. In sciences, on the other hand, there is a emphasis of certain types of epistemological processes on the structural or the organizational aspects of the various phenomena of Nature. In other words, whereas the main emphasis of sciences is on the study of the physical aspects of the various dynamic organizations in the diverse phenomena of Nature, the main emphasis of axiology is on the study of the teleological aspects of such organizations. Philosophy is the synthesis reached in personality through the harmony of the methodological approaches of sciences and axiology. Philosophy tries to grapple with reality, as it were, with its two arms of sciences and axiology. In this sense our philosophical theory is not an original invention or a speculative creation, but rather it is a discovery, however faint and fragmentary, of certain aspects

of reality which are revealed through the methodologies of sciences and axiology.

After making these pithy remarks on the importance of the role of personality in the development of a world-view we propose to briefly state the nature of human personality.

It may be mentioned at the very outset that 'personality' is a valid construct. Personality is a dynamic organization of psycho-physical entities. The 'physical' aspect of a personality has been studied and empirically verified by the different methods of biological sciences, and the 'psychical' aspect has been verified by the various methods of behaviour sciences. The physical and the psychical aspects of a personality are not mutually independent entities, but rather they are the two aspects of a complex dynamic organization called the 'personality'. From our philosophical standpoint, therefore, there is no problem of the relation between body and mind for they are the two aspects of the same organization. Body and mind are the two expressions of the dynamic organization of psycho-physical entities which are the ultimate constituents of reality. The psychical aspect of a psycho-physical entity represents the teleological principle and the physical aspect represents the principle of position. In a dynamic organization of psycho-physical entities creativity is the expression of the conflux of psychical aspects, and the organization is the expression of the conflux of physical aspects. Meaning is the expression of creativity, and existence is the expression of organization in a dynamic organization of psycho-physical entities. Since dynamic organizations have meanings they may be regarded as values in a sense. The ultimate constituents of reality and their dynamic organizations may be called meaning-existents, value-existents, or creative-existents. The hierarchy of meaning-existents depends upon the complexity of dynamic organizations of psycho-physical entities. Human personalities have the maximum degree of complexity of organization on earth. They are the highest forms of value-existents on earth. They are not merely the highest forms of value-existents, but they are themselves creators of the highest forms of value-existents on earth.

The nature of human personality has to be studied from

every possible point of view, *viz.*, philosophical, psychological and physiological. Each point of view throws some light at least on certain aspects of human personality. The nature of human personality can be adequately understood through the proper understanding of the various points of view in their right perspective. A comprehensive knowledge of human personality can be obtained only when all possible points of view are taken into consideration; otherwise a theory of personality is bound to be partial and inadequate. All through the history of human knowledge there has been a tendency to wrongly identify one of the aspects of human personality with the whole personality. The partial theories of personality are not necessarily wrong within their own spheres, but rather they are very often quite consistent within their specific areas. But when these partial descriptions of personality are viewed in relation to the whole personality they appear to be one-sided and inadequate. From our philosophical standpoint a comprehensive and consistent knowledge of human personality is possible only when all possible methods of approach for the study of personality are taken into consideration. That is the reason why the major points of view concerning the nature of human personality were discussed in this chapter, *viz.*, philosophical, psychological and physiological.

The main emphasis of the philosophical theories of personality was mainly on the notion of spiritual substance or thinking substance which was described as the inner core of personality. This permanent core was generally expressed by the term 'self'. In our theory of personality we shall avoid the term 'self' because it is associated with a lot of confusion due to the ambiguity of meaning of this term. It seems that there is no permanent core in a personality which may be described as a 'spiritual substance' or 'thinking substance'. There is no evidence whatsoever to prove that there is a permanent spiritual substance in the personality. In our view there is a permanent principle in personality called the 'dominant teleological principle' which persists as long as a personality continues to live. The persisting aspect of a personality is not a substance or a permanent core, but rather it is a principle or a law. The behaviour pattern of an individual which is fundamentally dynamic in its nature gives a clear

indication of the fact it is an expression of a principle or a law. The existence of the dominant teleological principle is due to the conflux of the psychical aspects of psycho-physical entities in the organization of a personality. The teleological principle is the governing law of a personality which integrates and regulates all possible laws of behaviour of a personality, such as the laws of assimilation, growth, development, reproduction, understanding, memory, imagination, creation, appreciation, and the like. Since the teleological principle is the governing law of personality, it cannot be precisely located at any specific part of a personality, but rather it pervades the personality even though the orientation of this principle may be well-defined in a particular direction or set of directions. To express the idea in more concrete terms it may be said that the teleological principle may be oriented towards the development of intellectual activities, emotional activities, motor activities and the like. In a person in whom the teleological principle is orientated towards the development of intellectual activities there may be greater impact of this principle on the cerebral region than on other parts of the organism. In a person in whom the teleological principle is oriented towards the development of emotional experiences there may be greater impact of this principle on the thalamus, hypothalamus, autonomic system, and endocrine system than on other parts of the organism. The teleological principle is a dynamic principle. The dynamic principle may be directed towards the development of any aspects of personality. The dynamic principle of the personality may undergo changes or modifications. Occasional changes in the orientation of the teleological principle is due to the fact that the latter is the law of laws, and being so there are chances of its occasional shifts to different ends due to internal and external influences. Consequently, the teleological principle may not follow the same line of development throughout the lifetime of an individual, but there may be occasional fluctuations in the orientation of the teleological principle to different ends. Each person has his own framework of laws of assimilation, growth, development, reproduction, impression, expression, understanding, creation and the like regulated by the governing law. The nature and strength of the governing law depends to

a very great extent upon other accompanying laws of personality. The governing law is not an absolutely immutable law in a personality, but rather it is only one of the laws amongst other laws even though its function is most important among the functions of other laws. The regulative function of the governing law depends to a very great extent upon the nature and intensity of each individual law in a dynamic organization of laws. It is evident, then, that each law produces its specific effect, however trivial, upon the governing law, and the governing law in its turn produces its unique effect upon the auxiliary laws of a personality. There is thus a reciprocal relation between the governing law and the auxiliary laws in a personality. However, in spite of the fact that there is a reciprocal relation between the governing law and the auxiliary laws, the governing law always integrates and regulates all laws until some one of the auxiliary laws predominates over it and assumes the rôle of the governing law. In sum, whichever principle in a dynamic organization of laws assumes the rôle of the governing law performs the function of giving direction to all possible active processes in an individual.

The governing law of a personality has the property of self-initiated activity. An activity produced by a personality in response to a stimulus from the environment is not mechanical or automatic, but it involves free choice by the governing law. Whenever a stimulus acts upon a personality the governing law consciously evaluates the nature of the stimulus and produces the appropriate response. It is evident, then, that the response of a personality to a stimulus involves free choice and decision by the governing law. The nature of the response of a personality to a particular stimulus from the environment is determined by the nature of the governing law. It is because of the existence of the governing law that a personality is free and autonomous. It is because of the existence of the autonomy of the governing law that a personality has the property of repelling those environmental influences which are detrimental to its well-being. It is also because of the regulative function of the governing law that a personality looks out for and selects those stimuli which are beneficial for its well-being. The property of repelling the harmful influences and selecting the beneficial ones depends upon

the nature and the strength of the governing law of a personality. Personality is, therefore, autonomous, and every action that it produces bears the unique stamp of its autonomy.

The governing law of a personality is the steering principle which persists throughout the lifetime of an individual. The steering principle comes into existence as soon as there is the organization of genetic materials through the fusion of a living spermatozoon and an ovum, and it progressively becomes more and more well-defined in the course of the entire process of gestation, parturition, and subsequent stages of growth leading to maturity in an individual. All integrating and regulating processes in an individual are determined by his innate steering principle. Naturally the behaviour pattern of an individual and the orientation of a personality towards certain goals are also very often determined by this innate steering principle. The nature of the steering principle is determined by the nature of the dynamic organization of the psycho-physical entities in a personality. The steering principle is nothing but the emergence of an organizing and regulating principle through the confluence of the psychical aspects of the psycho-physical entities in the organization of a personality. The steering principle originates in a gamete and persists as long as a personality continues to exist. It may be pointed out here that in our philosophical theory the expressions 'psychic principle', 'dynamic principle', 'teleological principle', 'regulative principle', 'steering principle', 'creative principle', 'governing principle', 'governing law' and the like have been used in almost the same sense.

The teleological principle of a personality is not a substance. It is not a static, unchangeable and permanent spiritual or thinking substance lying within the personality like a permanent core. Consequently, it is not proper to describe the teleological principle with the help of space-like terms, such as self, soul, spirit, ego, monad and the like. The dynamic, integrating and regulating aspects of a personality refer to a principle, and not a substance. The dynamic principle of a personality is a law. The law of dynamism is the expression of the conflux of psychical aspects in the dynamic organization of psycho-physical entities. The organization is the expression of the conflux of physical aspects in

a dynamic organization of psycho-physical entities. The organization and law of dynamism form a conjugate continuum. The law of dynamism is the binding force of an organization, and this law is determined by the teleological nature of the organization itself. The law of dynamism and the organization cannot be conceived in isolation from each other. The law of dynamism does not exist in its own right, but it exists in and through the organization itself. The law of dynamism is always the expression of the teleological aspect of an organization; hence, the nature of the law of dynamism is determined by the teleological nature of the organization itself. The dynamic nature of an organization is determined by the nature of its teleology. Each dynamic organization of psycho-physical entities has its own general framework of laws, and the number and nature of such laws are determined by the teleological complexity of the organization itself. Certain new laws may be created in an organization due to the ingression of the environmental laws into a dynamic organization of psycho-physical entities, or the innate laws of an organization may be partially or greatly modified due to the impact of the environmental laws. The laws of a personality are determined by the teleological complexity of its dynamic organization. The laws of a personality are different from the laws of other forms of organization because the organization of a personality has a larger number of co-ordinates than those of other forms of organizations on earth. By co-ordinates we here mean a number of actions or processes properly integrated for the production of a specific result or a set of results. The co-ordinates of an organization are integrated in an order as aspects of a whole. The organization of a personality has innumerable co-ordinates, such as assimilation, growth, development, reproduction, thought, imagination, creativity etc. Each aspect of a personality is governed by its own laws, and all these specific laws are integrated and regulated by the governing law of personality. A complex organization has a larger number of assimilative, absorptive and intromissive laws and devices than less complex organizations. It has also a larger number of protecting and repelling laws and devices than less complex organizations. Personality being a complex organization has a

larger number of assimilative, protective and repelling laws and devices than other types of organizations. Complexity is the determinant of the nature of organization of laws. The lesser is the complexity of a dynamic organization of psycho-physical entities the simpler and lesser are its laws; and the greater is the complexity of an organization the more complex and numerous are its laws. Human personality has the maximum complexity amongst the different types of organizations on earth, and hence, there is the maximum number and maximum complexity in the organization of its laws.

Complexity and creativity have reciprocal relationship. Complexity is the determinant of the nature of organizations. The nature of creativity is associated with the nature of complexity of a dynamic organization of psycho-physical entities. The greater is the complexity of an organization the greater is the possibility of its creativity. Complexity facilitates creativity, but it is not the determinant of creativity. Complexity of organization merely provides diverse media to the creative principle for self-expression. Creativity is not posterior to the complexity of organization, but rather the creative principle is prior to the complexity of organization. It is due to the fact that creativity is associated with time and organization is associated with space. The arrow of time drags space along with it. Complexity of organization follows the perennial advance of the creative principle like a trail providing the latter with ever-increasing media for self-expression. Creativity is the unified law of reality of which organization is the existential aspect. There are different degree of emphasis of the creative principle in different regions of reality. The maximum emphasis of the creative principle on earth is in human personality. The creativity in human personality far surpasses the creativity in other forms of organizations on earth, and the personality tries to have glimpses of reality through various epistemological processes. Since human personality has the maximum degree of complexity, it has the possibility of maximum creativity. A creative personality has not only capacity for creating novel and original values, but it has also the capacity for repelling those environmental influences which have a thwarting effect upon the creative upsurge of an individual.

A creative personality has greater degree of autonomy than other forms of organizations. It is due to the fact that in a creative personality there is greater predominance of the psychical aspects over the physical aspects in the dynamic organization of psycho-physical entities. In a physical phenomenon, on the other hand, there is dominance of the physical aspect over the psychical aspect in the organization of psycho-physical entities. That is the reason why a large-scale physical phenomenon is governed more by deterministic laws than by indeterministic laws. A human personality, on the other hand, is governed more by indeterministic laws than by deterministic laws. Autonomy and unpredictability of human behaviour are the expressions of an individual's creative teleology. However, in those individuals in whom there is lesser degree of predominance of the psychical over the physical in the dynamic organization of psycho-physical entities, there is greater uniformity and predictability in their behaviour. Nevertheless, some degree of creativity is present in all forms of dynamic organization of psycho-physical entities. It is possible to arrange the dynamic organizations of psycho-physical entities in a hierarchy ranging from the simplest forms of physical objects to the most complex forms of human personalities from the standpoint of creativity.

Creativity is the main purpose of human personality. All persons create values. The values that human personalities create may range from the most trivial to the most significant values. The greater is the degree of comprehension by an individual the more complex is the personality. The greater is the degree of complexity of a personality the greater are the possibilities of its creating novel, original and beautiful values which may have universal significance. It cannot be said, however, that the values created by every individual will have universal significance and universal appeal. Some of the values that certain individuals create may be most trivial, mediocre and insignificant. Nevertheless, anything whatsoever that human personalities create is a value since it is a meaning-existent. The meaning-existents created by human personalities are of a much higher order than those created by lower forms of living organisms and atomic systems. In an atomic system there is greater conflux of physical

aspects than the psychical aspects of the dynamic organization of psycho-physical entities, so that there is greater concentration of mass at the centre and the major aspect of the dynamic principle remains on the surface of the system occasionally radiating photons or light-quanta as the most simple forms of meaning-existents. In a living organism, on the other hand, there is partial convergence of the psychical aspects leading to the focalization and also internalization of the dominant teleological principle as a result of which the meaning-existents that it creates are of a higher order than those that are created by atomic systems. In a human personality there is the maximum confluence of psychical aspects of psycho-physical entities thereby providing the personality with innumerable avenues of impression and expression. In a human personality the creative principle is not diffused on the surface of the personality, but rather it is generally a well-defined internal principle. Values are created by the intensified and internalized creative principle of a personality. The body of an individual is a semi-permeable shell, as it were, which envelopes the creative principle of a personality. The more well-defined is the teleological principle in a personality the lighter and less significant is the body. In a personality in which the dominant teleological principle is well-defined to a very great extent, the physical aspect in such an organization of psycho-physical entities forms a light and translucent shell, as it were, through which the radiation of the creative principle emanates and forms an effulgent halo around the personality.

From our philosophical standpoint every human individual is a potential or a sufficiently developed artist. In our view anybody who tries to create sufficiently appreciable meaning-existents of any form is an artist. In this sense poets, painters, musicians, philosophers, scientists, housewives, farmers, mill-workers and the like are all artists in their own respective ways. Even robbers, murderers, iconoclasts, armed revolutionaries and the like are also potentially artists. But the destructive tendencies in such individuals far surpass their creative tendencies. In misanthropic or cynical persons also the artistic tendencies are sufficiently eclipsed by their lack of appreciation of the values created by others and sacrilege of their own values. Nevertheless,

whatever are the differences between individuals it cannot be denied that creative teleology is the fundamental law of human personality.

Whereas the persistent effort of philosophy has been to search for something permanent in human personality, the main aim of psychology has been to study the different processes and patterns of behaviour in response to certain stimuli from the environment. We briefly stated that from our philosophical standpoint the continuous principle of personality was the creative teleology. We would now like to state briefly that psychology is mainly concerned with the study of the behaviour patterns of individuals in response to certain stimuli from the physical and the social environment. As a matter of fact psychology is mainly concerned with the study of the nature of inter-personal relationship. The social environment is one of the determinants of the behaviour patterns of individuals. It must be mentioned here that while discussing the rôle of psychology in the study of personality we also include sociology and allied studies within the scope of psychology. In our view the fundamental principle which establishes the relationship between individuals in the society is the principle of appreciation. It must be mentioned here that the principle of appreciation has been used here in a very broad as well as restricted sense. The principle of appreciation has been used in the sense of generalized principle of intromission. The principle of appreciation involves observation, imagination, feeling, understanding and learning. The principle of appreciation establishes healthy relationship between individuals. But when this principle fails to operate in an individuals there is lack of normal relationship between individuals producing thereby certain reactions in personalities, such as phobias, anxieties, delusions, and the like. In extreme cases where the principle of appreciation fails to operate, there is lack of contact of an individual with the social environment which may result in certain types of personality disorders, such as schizophrenia, manic-depressive psychosis etc. However, in certain cases a particular member or a group of members of a society may behave in such a way that the normal process of working of the principle of appreciation may be suddenly arrested and inhibited in an individual through the

traumatic influences of the former. The shocking influences of certain member or members of a society may be so damaging to a personality that the governing law of the personality may be radically distorted and deflected from its normal mode of operation thereby sometimes resulting in double or multiple personality. The original continuity and identity of the governing law may be considerably eclipsed and obscured by the tremendous impact of the traumatic influences.

It cannot be doubted that if the principle of appreciation fails to operate normally and smoothly in a person or a group of persons there is corresponding failure of the development of healthy human relationships. When the principle of appreciation fails to operate in larger groups of persons there are communal tensions, national and international tensions, racial prejudices and the like which may culminate in riots, civil wars, revolutions, world-wars etc. But when this principle operates smoothly and normally there is amity, fellow-feeling, harmony, peace and order. Love and union are the expressions of the principle of appreciation. Hatred and repulsion are produced in persons when the principle of appreciation operates in the reverse direction, i.e., when there is inappreciation. It may be mentioned here that the principle of appreciation is a law of personality. In our view the law of creativeness is the governing law of personality, and the law of appreciativeness is the law of attraction and unification with reality and the various organizations thereof. The law of creativeness establishes internal harmony within a personality, and the law of appreciativeness establishes inter-personal harmony. All human relations are based upon the law of appreciativeness. It is not only the nature of human personality to create values, but it is also its nature to appreciate values created by others in a society. All forms of societies and social organizations are based upon the law of appreciation. In those societies and social organizations where the law of appreciation does not function normally and smoothly and where this law operates in the reverse direction there are signs of disintegration in such societies and social organizations. The law of appreciation, then, has the supreme binding force in every type of normal and healthy human relations.

Whereas the main emphasis of psychology is on the study of the psychical aspect of personality, the main emphasis of physiology, on the other hand, is on the study of the physical aspect of personality. Behaviour is the expression of the psychical aspects, and physiological organization is the expression of the physical aspects of the dynamic organization of psychophysical entities in a personality. Psychology mainly studies the behavioural aspect and physiology mainly studies the organizational aspect personality. The behavioural and the organizational aspects of personality are closely related to each other and they work in perfect concordance.

The physical aspect of personality works as an organized whole. The different parts of the physical aspect of personality are organically related to one another. The various physiological processes of an organism function in very close co-operation under the direction of the governing law. For instance, the nutritive substances are transformed into vital substances with the help of certain physico-chemical systems working directly under the direction of the governing law of personality. Likewise the sense organs and the nervous system also work in close co-operation under the direction of the governing law. The stimuli from the external environment are received by the receptors of an organism and are conducted to the brain where the various neuronc connections are established in the cerebral organization which persist in the personality in the form of neuronc connections on the physical aspect, and conscious and unconscious processes on the psychical aspect of personality. There is an element of autonomy and spontaneity in every organ and system of organs in the organism of an individual. The partially autonomous systems of an organism are integrated and regulated by the cerebral organization which seems to have maximum autonomy. The fact that the various parts of an organism have partial autonomy shew that each part is regulated by its own laws. However, since the different organs function in close co-ordination with one another so that the organism itself functions as an organized whole proves that the organism is subject to the governing law.

In conclusion, it may be said that personality is the fullest

expression of our world through which the latter makes persistent efforts to know itself and reality of which it is an integral part. Our world would have comprehended its own nature and the nature of reality clearly and comprehensively had it been the current value of the Absolute. But since our world is a past value of the Absolute still persisting as a relic, it cannot comprehend itself and reality clearly and comprehensively because the creative teleology of the Absolute which it shared in got considerably obscured through lapse of time. Nevertheless the creative teleology of the Absolute which our world shared in got focalized in human personality in the course of a long and complex evolutionary process. That is the reason why a human personality has a persistent urge to know itself and reality as clearly and comprehensively as possible. The teleological principle in the world presupposed the emergence of human personality in the course of the cosmic evolution. The conjugate aspects of creative law and organization exist simultaneously in human personality. But the law of creativeness far surpasses the organization aspect of a personality. There is superjection of the law of creativeness over the organizational aspect of personality. That is the reason why all discoveries trail the perennial advance of creative teleology. Plans presuppose the actual achievements of human personalities. It is because of the fact that the principle of creativity far surpasses the organizational aspect of personality, it may be expected that in not too distant future super-personalities or supermen may appear on the world's panoramic stage.

CHAPTER V

THE PRINCIPLE OF INDIVIDUATION

The problem of the principle of individuation is of fundamental importance for adequate comprehension of the nature and purpose of human personality. Any theory of personality which ignores this problem omits an important aspect of personality; and consequently, such a theory is bound to suffer from certain defects. Most of the psychological interpretations of personality describe merely certain superficial features or traits of an individual, but fail to describe the real nature of personality because such theories ignore the problem of the principle of individuation. We think that a proper study of the principle of individuation will throw light not only on the nature of human personality, but it will also give a clue to the nature of reality. It is necessary, therefore, to examine the problem of the principle of individuation in the light of its historical background.

St. Thomas maintained that matter was the principle of individuation in all grades of Being. Individuals communicate amongst themselves through the medium of matter. God, according to St. Thomas, is not an individual. He is not a corporeal being. He is a self-sufficient Being, and He individuates Himself by the very fact that He is a self-sufficient Being; and hence, He cannot be contained in anything else. Thomas, therefore, concluded that God could not be an individual for matter was the principle of individuation.¹ The finite individuals are individuated by virtue of their material existence. Individual difference is also the source of formal difference amongst species of living beings which have a tendency to perpetuate themselves.²

St. Thomas' view on the principle of individuation is inadequate. Matter alone cannot be regarded as the principle of individuation. It may be true that material existence plays its part in individuating a person. But mere material existence

1 *Summa Theol.*, Q. XXIX, Art. III.

2 Gilson, *Le Thomisme*, p. 216.

cannot be regarded as the principle of individuation. The individuality which is created by material existence is so flimsy that a particular thing may lose its individuality through any major accident. Any material object may be transformed into another form of matter. A human personality cannot be said to have unique individuality simply because he has a peculiar organic structure. His uniqueness is due to some other principle.

The view of Duns Scotus on the principle of individuation is a slight improvement on that of St. Thomas. The Thomistic view, according to Duns Scotus, is wrong. Duns Scotus maintained that an individual retained his individuality even though his corporeal dimensions might change. He pointed out that mere material existence of an individual could not be regarded as the principle of individuation. According to him, a material substance can neither be regarded as an individual nor as the principle of individuation. A stone, for instance, cannot be regarded as an individual simply because it has material existence. Duns Scotus maintained that individuals were ideas, and that these pure ideas existed even before God created them. In other words, persons possessed their individualities in the form of ideas long before they came into existence. Duns Scotus pointed out that an individual was opposed to the universal. The universal is the genus which includes the species within itself, and as such it is capable of being logically divided. For instance, 'man' is a universal concept. It refers to a class; and hence, it can be logically divided into its sub-classes. An individual cannot be logically divided. His existence is unique the parallel of which cannot be found anywhere.

The view of Duns Scotus is open to certain objections. Duns Scotus made a mistake when he pointed out that finite individuals existed in the form of ideas prior to their being created by God. His view implies that finite individuals have come into existence out of the primordial ideas. He did not substantiate his view by any satisfactory evidence. Even if it is taken for granted that finite individuals are the actualizations of eternal ideas, it may be asked what principle differentiates one individual from another. One abstract idea cannot be differentiated from another idea unless each idea has unique meaning of its own. Hence, a

mere abstract idea cannot be regarded as the principle of individuation. Individuals cannot be regarded as different from one another unless there is some principle of differentiation in them.

Locke maintained that substance was the ultimate reality. Substance was regarded by Locke as the substratum of all qualities. According to Locke, space and time taken as a whole are the principle of individuation. The identity of an individual is determined by his peculiar position in space and time. Personal identity is nothing but the participation in the same continued life by constantly fleeting particles of matter. A mass of matter remains identical as long as the same constituent atoms remain in the same arrangement. But the configuration of material particles changes in the case of living organisms. The identity of an organism is due to the synthetic organization of the parts for the maintenance of a single life. Locke, therefore, maintained that substance was the ultimate reality and continued existence in space and time was the principle of individuation.

Locke's view of the principle of individuation is unsatisfactory. An object cannot be regarded as an individual simply because it retains its position intact in space and time. Mere arrangement of particles in a particular form cannot be regarded as the principle of individuation. Persons cannot be regarded as unique individuals simply because they occupy peculiar positions in space and time. If mere position in space and time and particular arrangement of material particles were the principle of individuation, then there would be no difference between objects and persons. But such a view is unsatisfactory. Persons cannot be regarded as unique simply because they have specific existence in space and time.

While Locke regarded physical phenomena as the principle of individuation, Bradley suggested that a metaphysical principle was the principle of individuation. Bradley maintained that reality was an all-inclusive and self-consistent system. Reality is devoid of discords and contradictions. Finite individuals and objects, according to Bradley, are appearances and they do not have individuality of their own. Reality is an all-inclusive system

which embraces all partial diversities in a concord.³ All-inclusive and self-consistent experience has true individuality. In other words, the Absolute is the only individual.⁴ Finite individuals are not real. They are all appearances, and they lose their identities in the Absolute. Perfection and individuality belong only to that whole in which all finite appearances are at once present and absorbed.⁵ According to Bradley, self-consistency and all-inclusiveness are the principles of individuation. The Absolute alone is the self-consistent Being. It is the totality of sentient experience. It is an individual, but it is not a person.

Bradley's view of the principle of individuation is open to certain objections. He pointed out that the Absolute was the only individual, but not the finite selves. It appears from a careful examination of Bradley's view that in his doctrine reality has neither selfhood nor personality nor teleology, and hence, strictly speaking it cannot be regarded as an individual. It was sheer dogmatism on Bradley's part when he suggested that all-inclusiveness and self-consistency were the real principles of individuation. Bradley suggested a metaphysical criterion of individuation which cannot be empirically verified. Bradley pointed out that finite selves were not individuals because they were full of internal contradictions. Finite individuals are not appearances as Bradley thought, but they are real individuals by virtue of their unique teleology. Finite individuals do not attain individuality by identifying themselves with the impersonal Absolute. The idea of the merging of finite individuals in the all-inclusive unity of the Absolute is a crude material analogy; as, for instance, drops of rain are dissolved into the water of an ocean. Finite individuals are unique centres of experience; and hence, they cannot be dissolved or transmuted into an impersonal Being. Moreover, Bradley committed the mistake of drawing a distinction between personality and individuality. He means by individuality the totality of undifferentiated experience. This pure experience contains no contradictions, discords and

³ *Appearance and Reality*, p. 146.

⁴ *Op. Cit.*, p. 140.

⁵ *Op. Cit.*, p. 499.

pluralities in it. This self-fulfilled all-inclusiveness is the principle of individuation. Bradley's view seems to be wrong for a mere abstract unity cannot be regarded as the principle of individuation. Had it been so the totality of material energy could be regarded as an individual. Likewise the space-time continuum could be regarded as an individual because of its self-completeness. But mere self-consistent unity alone cannot be regarded as the principle of individuation. Individuality does not belong to an abstract principle, but rather it belongs to a teleological personality. Bradley's metaphysical interpretation of the principle of individuation, therefore, seems to be wrong.

Bosanquet's doctrine of the principle of individuation resembles that of Bradley very closely. He maintained that a finite self was a transitory being in the universe. The self is in the process of self-transcendence. It tries to identify itself with the Absolute by transcending its fragmentary and partial nature. It approximates its true individuality by resolving its contradictions in the rational whole. Bosanquet pointed out that individuality was due to logical necessity. The self transcends itself under the principle of logical coherence and self-consistency. Bosanquet maintained that individuality was a self-complete whole. He pointed out that the ultimate individual had no other individual to distinguish itself from, and hence, it was stable and self-contained.⁶ He, therefore, observed that there could be only one individual, and that individual was the Absolute.⁷ According to him, finite selves are not individuals, but they attain their individuality when they are transmuted into the ultimate reality indistinguishably.⁸ An individual is a self-complete whole devoid of all contradictions.

Bosanquet's view is open to the same objections that were stated against Bradley's view. Bosanquet maintained like Bradley that Absolute alone was the individual and finite selves were mere appearances. It seems that both Bradley and Bosanquet did not clearly understand the real implications of the

6 *The Principle of Individuality and Value*, p. 70.

7 *Op. Cit.*, p. 68.

8 *Op. Cit.*, p. 289.

principle of individuation. Both Bradley and Bosanquet dogmatically assumed a criterion of individuation and then applied that criterion to finite individuals and declared them as mere appearances. Finally, both Bradley and Bosanquet asserted that the criterion of individuation was identical with the ultimate reality itself. Hence, they pointed out that the Absolute was the only individual. It is evident, then, that Bradley and Bosanquet did not establish the principle of individuation through any valid argument or direct evidence, but they tried to reaffirm their dogma by arguing in a circle. They could not sufficiently justify their thesis that coherence and self-sufficiency was the principle of individuation. An individual is not a logical category. Bosanquet could not justify his position that reality was a rational whole. The fact that non-rational elements exist in the universe cannot be denied; and it is not clear how the rational elements along with the non-rational elements form a coherent whole. Bosanquet maintained that the distinction between finite selves was only formal. He did not clarify his thesis that the distinction between selves was only formal. Pringle-Pattison remarked that selves were not like empty cases into which certain contents were put later on. He pointed out that selves were formally distinct because they were really different.⁹ In Bosanquet's view finite selves were not real individuals, but they were merely disappearing qualities. Pringle-Pattison remarked that strictly speaking Bosanquet's metaphysical doctrine did not contain the idea of self at all for everything in his view of the world was reduced to disappearing qualities which were ultimately housed in the Absolute.¹⁰ Bosanquet denied the existence of the self on the basis of a criterion the validity of which cannot be ascertained by any empirical method. He was not justified in completely ruling out the empirical method which is universally acknowledged as one of the valid methods of ascertaining truth. If he was at all in the possession of the ultimate criterion of truth, he could not legitimately exclude the empirical method which is necessarily an aspect of a comprehensive criterion of truth. He was, there-

⁹ *The Idea of God*, p. 267.

¹⁰ *Op. Cit.*, p. 271.

fore, not justified in denying individuality to a finite personality, which stands verified as a valid construct through empirical confirmation.

While most of the earliest philosophers did not dwell sufficiently on the problem of the principle of individuation, Royce discussed the problem quite elaborately. He maintained that the Absolute was a self-conscious personality, and finite individuals were fragmentary experiences within the Absolute. Finite individuals are expressions of the Absolute Will. They are the differentiations of the Absolute. They are real, and they exclude one another by virtue of their uniqueness. Royce pointed out that the principle of individuation could not be defined in purely theoretical terms. Finite individuals, according to Royce, are ethical beings. They strive their best to achieve perfection in the eternal moral order. Royce maintained that the Absolute was the only ultimately real individual. According to him, the Absolute is a unique individual.¹¹ The Absolute individuates itself by its own will. The whole universe is the expression of the Absolute. Finite individuals are unique because they are the expressions of the Absolute Will. The Absolute includes within itself finite individuals who have relative freedom and relative separateness. Royce maintained that the self-consciousness of each finite individual was a portion of Absolute's self-consciousness.¹² The Will of the Absolute stands differentiated into many. According to Royce, finite individuals were ethical categories who aimed towards an ideal.¹³ He further maintained that the Absolute individuated the finite selves through its exclusive interest in them; and that the finite selves in their turn tried to align their ethical ends with the ethical purpose of the Absolute by their voluntary efforts. It is clear, then, that sometimes Royce considered will to be the principle of individuation and sometimes he regarded love of the Absolute for the finite individuals as the principle of individuation.

It may be admitted here that Royce's view on the principle

¹¹ *The Conception of God*, p. 272.

¹² *Op. Cit.*, pp. 273-4.

¹³ *The World and the Individual*, Series I, p. 418.

of individuation was more elaborately worked out than the views of some of the earlier philosophers for he at least recognized the reality of finite individuals and their distinctive individualities. It is also true that will is an important aspect of the principle of individuation. However, Royce's view seems to be wrong when he tried to equate volition with the principle of individuation itself. It will be pointed out later on that will or volition itself cannot be regarded as the principle of individuation. However, sometimes Royce regarded love and exclusive interest of the Absolute in the finite individuals as the principle of individuation. Here there seems to be inconsistency in Royce's view of the principle of individuation. Love and interest are essentially affective in their nature. It is, therefore, not clear whether volition or feeling is the real principle of individuation in Royce's view. Volition and feeling are the different aspects of a personality, and hence, they cannot be regarded as mutually identical. It seems that Royce was confused in his mind regarding the real implications of the problem of the principle of individuation. Love cannot be regarded as the principle of individuation. It is one of the virtues of a teleological personality. It is a principle which unites personalities in harmony. It is a principle of union and communion between loving personalities. Royce, therefore, made a mistake when he stated that love was the principle of individuation. Love does not individuate a person, but rather it enables him to appreciate values in a personality and thereby brings about harmony between the two. Love can neither individuate a person who loves nor a person who is loved. Royce, on the contrary, pointed out love individuated at once both the mother and the child, and the lover and the beloved.¹⁴ He further pointed out that God or the Absolute had exclusive interest in the finite personalities, and that was the reason why they became unique individuals. Royce was so deeply obsessed with the idea of love as the principle of individuation that he went to the extent of saying that if an individual loved his profession the latter got individuated. Here Royce's way of thinking seems to be rather strange. It is intelligible that a person may appreciate

14 *The Conception of God*, p. 265.

values in another person through his loving attitude towards the latter; but how can he individuate the latter through his exclusive love and interest in the latter? A person generally does not have complete control over another individual's personality; hence, it is impossible for a person to individuate another person. It is obvious, then, neither will nor love is the principle of individuation. Volition is a process through which a person may be individuated, but it is not the principle of individuation. Furthermore, volition is not the only process through which an individual can be individuated. A person can be individuated through feeling, thought and intuition. Moreover, Royce believed that the Will of God worked through the personalities of finite individuals. He pointed out that finite individuals possessed their individualities in and through God; and that finite persons attained their true individualities in their union with God.¹⁵ Here Royce's argument does not seem to be plausible. If God's Will and Consciousness worked through the minds of finite individuals, they would have known it. But since individuals are not generally conscious of the fact that God's Will and Consciousness works through their minds, it is clear that Royce's belief is dogmatic. Thus, Royce's view of the principle of individuation seems to be unsatisfactory.

Joshi maintained that reality was abstract and dynamic. According to him, the dynamic reality is the Absolute. Finite objects and individuals constitute the individuations of the Absolute. Finite individuals come into existence due to the inner impulsion of the Absolute Self. The Abstract feels the necessity of individuating itself. The concrete is burdened by its inertia; and hence, it cannot be individuated. The more concrete is an individual object, the lesser are its possibilities of dynamism.¹⁶ The Absolute being purely abstract contains nothing within itself, but it has the capacity of making everything out of itself by virtue of its dynamism. The concrete is co-extensive with the actual individuation of the Absolute.¹⁷ The Absolute differentiates itself into many. The existence of the finite selves is due

15 *The World and the Individual*, Series II, p. 433.

16 *The Metaphysics of Individuation*, p. 129.

17 *Op. Cit.*, p. 129.

to the individuation of the Absolute. The principle of individuation is the link between the one and the many. The abstract one divides itself into the concrete many owing to the inherent impulsion of the Absolute to issue forth out of itself. According to Joshi, individuation is another name for the dynamism of the Being.¹⁸ The concrete is the product of the individuation of the Absolute, but the finite self which is concrete does not individuate itself. Finite individuals depend upon the Absolute for their individuated existence. The Absolute alone is the source of individuation.

Joshi's conception of the Absolute and its principle of individuation is vague, confused and inconsistent. He used vague terms to explain the nature of reality. He did not clearly explain the nature of the distinction between the 'abstract' and the 'concrete'. It is doubtful whether the distinction between 'abstract' and 'concrete' can be regarded as scientifically and philosophically valid. The conception of the Absolute as a purely abstract idea seems to be a meaningless idea. The abstract cannot exist by itself. If it is taken for granted that there is such a thing as abstract existing in its own right then it must exist in some teleological personality. Joshi refused to predicate anything regarding the nature of the Absolute for he believed that to predicate anything of the Absolute was to finitize it. But this seems to be wrong logic. If predication meant the negation of reality as Joshi believed,¹⁹ then nothing could be said about the Absolute; and in that case no one could posit any theory of reality apart from maintaining perfect silence about it. However, Joshi conveniently forgot about his method of reasoning and affirmed that the 'abstract' was the predicate of reality; but due to the fear of being entrapped in his self-styled logical system he did not define the meaning of the term 'abstract'. Instead of enigmatically characterizing the Absolute as 'Abstract', he could very well call it by any other fictitious name. In any case, the abstract cannot exist by itself. Joshi did not anywhere clearly discuss the mode of existence of the 'abstract' Absolute. Further-

18 *Op. Cit.*, p. 153.

19 *Op. Cit.*, p. 142.

more, he characterized the Absolute as dynamic in its nature by contradicting his own logic. How can dynamism belong to a purely abstract existence? Dynamism can subsist in an object or an individual, but it cannot subsist in pure abstraction. Pure dynamism cannot individuate itself; individuation presupposes a self-conscious and teleological personality. Joshi's view seems to be meaningless and absurd when he pointed out that the concrete world had come out of a contentless abstraction. It implies, then, something has come out of nothing which is an utterly absurd idea. Every concrete entity that exists now is a modification or transformation of some other form of concrete entity. It is obvious, then, that an impersonal contentless abstraction cannot individuate itself in the form of the concrete. If pure abstraction is completely different from the concrete in its basic nature, then the abstract cannot individuate the concrete. In brief, then, Joshi's metaphysics of individuation is full of defects.

A brief exposition of the different theories of the principle of individuation was given in the preceding few pages. Many philosophers did not tackle this problem at all; and those who tackled it did their job in a most unsatisfactory way. It is quite obvious, then, that the problem of the principle of individuation has remained neglected so far. Those few philosophers who made attempts to study this problem gave sufficient indications through their writings that they could not thoroughly understand the nature and the implications of this fundamental problem. That is the reason why most of the philosophers wrongly identified some aspect or some process of personality with the principle of individuation itself. That is also the reason why philosophers could not rightly understand the nature of human personality and also the nature of reality. Most of the philosophical theories very often remained inadequate and superficial because most of the philosophers could not clearly understand the real importance and the implications of the principle of individuation. The mistakes made by different philosophers were of different varieties. According to one type of philosophical theories, reality is undifferentiated. In this type of philosophical theories the problem of the principle of individuation is not a fundamental problem at all because in such theories there is no other individual

but the Absolute or reality itself. According to such theories, finite personalities are only appearances. According to another type of philosophical theories, differences are there in reality, but those differences are not fundamental. In theories of this type individual differences are in and for God, and finite individuals are individuated in and through God. In such theories the problem of the principle of individuation is not solved at all, but rather the real issues of this problem are either avoided or over-simplified by assigning the rôle of individuation to God Himself. In theories of this type finite individuals do not individuate themselves, but rather they are individuated by God. Consequently, according to such theories, finite personalities are not autonomous individuals in their own right, but rather they are regarded as mere puppets in the hands of God. The rest of the theories which recognize individual differences, treat the problem of the principle of individuation most superficially without touching the crux of the problem at all. In such theories some of the most important problems of individuality and reality remain untackled. We think that the difficulty with all these varieties of philosophical theories is mainly due to the fact that according to them reality is fundamentally static. According to most of the philosophical theories, reality is considered to be either eternally differentiated or eternally undifferentiated with all values eternally realized in it with no possibility of real change and evolution in the world. According to most of such philosophical theories, reality is considered to be some kind of eternally structured substance or stuff with no real change or Becoming. This type of view seems to be fundamentally defective because it ignores dynamism as one of the ultimate principles of reality. The meaning, purpose, and value of reality cannot be comprehended adequately without reference to the dynamic principle of reality. In our view the meaning, purpose and value of reality and the various dynamic organizations thereof can be understood thoroughly through proper comprehension of the dynamic principle of reality for meaning, purpose and value are inherent in the latter. Therefore, the problem of the principle of individuation can be comprehended through the proper understanding of the dynamic principle of reality.

Before we give our interpretation of the problem of the principle of individuation we would like to pose the following question: Is a person individuated at all? Our answer to this question is definitely in the affirmative. Individuality of persons is an actual fact, and it has been proved by elaborate psychological studies on individual differences. It is established beyond doubt through a wide variety of psychological tests that individual differences are definitely there. Persons differ from one another on the basis of their differences of intelligence, aptitudes, interests, motives and so on. However, the views of psychologists have been intentionally left out here because they are only concerned with the measurement of individual differences, but not with the principle of individuation. The inadequacies of the psychology of personality are due to the fact that psychologists did not understand the importance and the implications of the principle of individuation. That is the reason why psychological theories of personality and personality differences appear to be most superficial and trivial. Nevertheless, the painstaking researches conducted by psychologists for establishing individual differences is quite praiseworthy.

The problem of the principle of individuation is of vital importance from the point of view of our philosophical theory. It seems to us that the nature of reality can be sufficiently discovered through a clear understanding of the principle of individuation. Hitherto the inadequacies of philosophical and scientific theories in their respective attempts to get a comprehensive view of reality are due to the fact that such theories very rarely paid attention to the problem of the principle of individuation. Most of the philosophical theories have been so far persistently trying to discover the ultimate substance or stuff of reality, and not the dynamic or the teleological aspect of reality. Most of the philosophers believed that if there was any kind of dynamism in reality it was in the form of some kind of pre-established harmony. In such philosophical theories values are either considered to be eternally realized or they are considered to be realizable by following certain fixed patterns pre-arranged by God or the Absolute. That is the reason why there is an element of finalism in almost all philosophical theories of the

world. Most of the philosophical theories failed to note that there was an autonomous and dynamic aspect of reality which did not necessarily operate according to predetermined plans. We believe that the autonomous, dynamic and creative aspect of reality baffles all predeterministic and finalistic interpretations of reality. Philosophical theories are generally held in disrepute in recent times in academic circles because they generally appear to be far removed from Nature. This disrepute of philosophical theories is mainly due to the fact that most of such theories regarded reality as static in some way or the other,—a position which is contradicted by certain recent discoveries of some of the pure sciences. Compared to the futility of philosophy the position of science is somewhat satisfactory. Scientists not only made persistent efforts to study the nature of the fundamental constituents of the various phenomena of Nature, but they also tried to study the laws in accordance with which the various phenomena of Nature behave. Rapid progress of sciences is not only due to the discovery of larger and larger number of fundamental constituents of the various phenomena of Nature, but also due to the discovery of larger and larger number of laws in accordance with which the various phenomena of Nature behave. Persistent attempts are also being made by scientists to subsume the various specific law under more and more general and comprehensive laws. In recent times attempts are also being made by certain scientists to explain all laws of Nature by one comprehensive law. These are some of the promising signs in recent developments of some of the sciences which may lead to the discovery of the various features of reality.

Scientists are mainly concerned with the study of the various phenomena of Nature and their modes of behaviour, but they are not exactly concerned with the study of the principle that is responsible for the integration and the regulation of the various types of organizations of Nature. Scientists are mainly concerned with answering the 'whats' and 'hows' of the various phenomena of Nature, and not exactly with answering the latter's 'whys'. Scientists do not generally answer *why* a particular type of organization of Nature behaves in a specific way. Perhaps this is a question which scientists cannot be legitimately expected

to reply. The 'whys' of the various phenomena of Nature refer to the meaning or the teleological aspects of the various dynamic organizations. Consequently, the answer to the 'whys' of the various phenomena of Nature can be appropriately given by axiology. Nevertheless, it is not unlikely that at some future date scientists may have the possibility of giving answers to the 'whys' of the various phenomena of Nature and thereby merging the sciences into philosophy through the channel of axiology. The science which has the greatest promise of giving answers to the 'whys' of the physical phenomena is physics which has already a marked tendency for steering towards philosophy. It appears that the science of genetics will also follow the footsteps of physics in not too distant future. The science which should be able to provide answers to the 'whys' of conscious behaviour is psychology. But unfortunately it is still in a stage of helpless infancy. Nevertheless, it is not unlikely that suitable answers may be provided by the various sciences singly or jointly to the 'whys' of the various phenomena of Nature in not too distant future. It may be mentioned here that from our philosophical standpoint 'what' refers to the structure, 'why' refers to the meaning and purpose, and 'how' refers to the behaviour of the dynamic organizations of the various phenomena of Nature. In our view 'how' is the result of the conflux of 'what' and the 'why' of a phenomenon of Nature. 'How' refers to the process through which teleology expresses itself through an organization. Proper study of the 'hows' can give a clue to both the 'whats' and the 'whys' of the various phenomena of Nature because the 'hows' represent the conflux of 'whats' and 'whys'. However, unfortunately philosophy has been mostly concerned with the 'whats' of Nature or the structure of reality, and sciences have been mostly concerned with the study of the 'whats' and the 'hows' of the various phenomena of Nature. But the 'whys' of the various phenomena of Nature have remained unanswered so far. The answer to the 'whys' of the various phenomena of Nature should have been provided by axiology. But hitherto axiology remained a specialized branch of study which took into consideration only the so-called 'higher values of life', viz., ethical, æsthetic and religious values. We believe that axiology

will have to extend its field of study incorporating therein the general theory of meanings and values. We, therefore, use the term 'axiology' in two senses, viz., a general sense and a restricted sense. In our view axiology in its general sense studies the meaning and the purpose of the various dynamic organizations of reality. Axiology in its restricted sense studies the so-called 'higher values', viz., ethical, æsthetic and religious values. The inadequacies of philosophical and scientific theories are due to the fact that axiology in its general sense did not develop so far. We believe that rapid developments will take place in philosophy as well as sciences when philosophers and scientists clearly understand the implications and importance of axiology in the general sense. It is our hope that philosophers and scientists of future will be able to discover a hierarchy of meanings and teleologies in the various dynamic organizations of reality with the aid of axiology in its general sense. Philosophers and scientists will be able to correlate the 'whys' with the 'whats' and the 'hows' of the various phenomena of Nature with the aid of axiology in the general sense. Axiology in the general sense will open up new avenues to philosophy and sciences wherewith the latter will be able to discover meanings and teleologies in the various phenomena of Nature.

Scientists of different branches of sciences have so far adopted the operational method for the study of the various phenomena of Nature. They are mainly concerned with the measurement of those aspects of the various phenomena of Nature which can be objectively observed and recorded. They are, therefore, mainly concerned with the quantitative description of the various phenomena of Nature in terms of various units of measurement. They employ various devices for the measurement of the diverse phenomena of Nature. It is obvious, then, that scientists have so far been able to give only quantitative description of the various phenomena of Nature. To use the terminology of our philosophical theory scientists are mainly concerned with the description of the physical aspects of the dynamic organizations of psych³-physical entities. Scientists generally do not go beyond the description of the organizational aspects of the various phenomena of Nature. We have no

dispute so far as scientists are concerned with the operational description of the organizational aspects of the various phenomena of Nature. In fact, it is the prime concern of scientists to give objective description of the various phenomena of Nature in terms of quantitative measurements. But our main charge against scientists is on the point that they have so far completely neglected the qualitative evaluation of the various phenomena of Nature. So far scientists have not thrown any light on the meaning and the teleological aspects of the various phenomena of Nature. Scientific theories are one-sided and imperfect mainly because scientists have not given the evaluation of the meaning and the teleological aspects together with the quantitative description of the organizational aspects of the phenomena of Nature. However, most of the scientists cannot be blamed much that they could not give any evaluation of the meaning and the teleological aspects of the various phenomena of Nature because the meaning and the teleological aspects did not become sufficiently well-defined in most of the phenomena of Nature, *viz.*, in the physical and the biological phenomena. However, we believe that in not too distant future when scientists clearly understand the implications and importance of axiology in the general sense they will make persistent efforts to give satisfactory evaluation of the meaning and the teleological aspects together with the quantitative measurement of the various phenomena of Nature. It is most encouraging to note that in contemporary physics there is a growing tendency for giving evaluation of the meaning aspect together with the objective measurement of physical phenomena. It may be pointed out, however, that the tendencies in some of the contemporary physicists for giving evaluation of the meaning aspects of physical phenomena have not yet become sufficiently explicit, but indications of such tendencies seem to be there. A few examples may be cited here to illustrate our point. Hitherto conservation of parity was considered to be a law in quantum physics which said that phenomena of Nature had no special preference for the right or the left hand side. In other words, it was believed that physical phenomena behaved undiscerningly without any specific preference either for the right or the

left side. T. D. Lee and C. N. Yang found in course of their study that the two sets of pions of the two mesons called 'tau' and 'theta' had specific preference for direction²⁰ This discovery of Lee and Yang showed that Nature seemed to favour a specific orientation, *viz.*, a right-handed or left-handed orientation. It shows, therefore, that the law of conservation of parity has broken down at least in the realm of particle decays like tau's and theta's.²¹ The obvious conclusion that follows from this discovery is that symmetry in the various phenomena of Nature is not a universal and *a priori* principle. There are instances of asymmetry alongside instances of symmetry in the various phenomena of Nature. The preference of some of the physical phenomena for certain specific directions gives indication to the fact that each phenomenon of Nature may have unique teleology. Every phenomenon of Nature may have its unique meaning and teleology which is perhaps expressed through its specific mode of behaviour. We may give another example here to show that there is a growing tendency in some of the contemporary physicists for giving evaluation of the meaning aspects of physical phenomena. George Gamow pointed out that in the light of the recent discoveries in physics distinction could not any longer be made between the particle and the wave aspects of subatomic particles. The particle and the wave aspects are both simultaneously present in subatomic particles. Gamow suggested that subatomic particles were guided by their wave aspects, and that this guidance was performed in a probabilistic rather than in a deterministic way.²² The use of the term 'guidance' with reference to subatomic particles seems to have axiological implications. It may be suggested here that the wave aspect of a subatomic particle is the expression of the teleological principle which gives specific orientation to the particle. It is true that axiological and philosophical interpretation of the wave aspects of subatomic particles is not specifically given by physicists, but the

20 Morrison, P., 'The Overthrow of Parity', *Scientific American*, 1957, Vol. 196, No. 4, p. 52.

21 *Op. Cit.*, p. 56.

22 Gamow, G., 'The Principle of Uncertainty', *Scientific American*, 1958, Vol. 198, No. 1, p. 55.

description of subatomic phenomena given by physicists gives enough hint through which philosophical meanings can be sufficiently understood. It is quite obvious from these few instances cited above that there is great promise in contemporary physics which, we believe, will be able to give in not too distant future the evaluation of the meaning and the teleology along with the quantitative measurement of physical phenomena. It may also be expected that in near future physics will be raised to the status of a comprehensive science in the sense that it will perhaps be able to give comprehensive and consistent qualitative evaluation along with quantitative description of physical phenomena. The growing tendency in some of the contemporary physicists to give an adequate evaluation of the meaning aspect of physical phenomena is quite praiseworthy because the meaning aspect of physical phenomena is not so well-defined as in other phenomena of Nature. The teleological aspect is more well-defined in human personality than in other phenomena of Nature. It could be legitimately expected, therefore, that a satisfactory evaluation of human personality would be given by psychologists along with the measurement of behaviour. But most unfortunately the position of most of the contemporary psychologists became more and more ridiculous as they discarded the psychic and teleological concepts from psychology and accepted the operational method of investigation as the only legitimate method of investigation in psychology. It was the ambitious aspiration of some of the over-enthusiastic psychologists to raise psychology to the status of an objective and experimental science by giving description of human personality purely in terms of quantitative measurements of the various forms of human behaviour and the organic processes accompanying behaviour. The behaviourist psychologists recoiled from giving any evaluation of meanings, teleologies and values in human personalities. They considered it to be a most disgraceful affair to dabble in those constructs which are generally used by philosophers. Consequently, some of the terms like mind, consciousness, teleology and the like were discarded by staunch behaviourist psychologists as unusable constructs. This sort of belligerent attitude on the part of behaviourist psychologists towards philosophers and their termino-

logies is nothing but a sort of academic prejudice. On what grounds can it be said that there is no conscious purpose in human behaviour? The behaviourist psychologists had to twist facts, and coin new terms in order to avoid those terms which have psychic or teleological implications. The behaviourist psychologists seem to show lack of mature judgment when they tried to blindly imitate the operational methods of the pure sciences like physics, chemistry and biology. We believe that judicious and open-minded psychologists will have to reorient their methodology by incorporating the method of evaluation of the meaning and the teleological aspects of human behaviour as an integral aspect of the comprehensive methodology of psychological investigation. In conclusion, we submit, that operation and evaluation, measurement and judgment, analysis and synthesis must go *pari passue* as the integral aspects of the comprehensive methodology of knowledge. In the comprehensive methodology of knowledge the operational method will measure the organizational and the behavioural aspects and the valuational method will ascertain the meaning and the teleological aspects of the various phenomena of Nature. It is the function of the comprehensive method of knowledge to correlate the 'whys' with the 'whats' and the 'hows' of the various phenomena of Nature.

It was stated in the preceding chapters that the ultimate constituents of reality and the various dynamic organizations thereof were meaning-existents, value-existents or creative-existents. It is possible to arrange the various organizations of meaning-existents or creative-existents on earth in a hierarchy ranging from the simplest form of physical phenomena to the most complex form of human personalities. In a sense, therefore, all forms of dynamic organizations of psycho-physical entities have individuality. However, the term 'individuality' is not ordinarily used for all types of organizations, but it is used specifically for those organizations in which teleology is sufficiently well-defined. In other words, the term 'individuality' is specifically applicable to those human personalities in whom creative teleology is sufficiently well-defined. All forms of organizations of psycho-physical entities may have individuality in a very broad sense, but in common usage the term 'individuality' is not used in its broad

sense. We do not generally speak of the individuality of a stone or plant or an animal. But we use the term 'individuality' specifically for those human personalities who have acquired distinctiveness and uniqueness through creativity. The valuational method is mainly concerned with the ascertainment of the teleological aspect of a personality. That is the reason why we have given so great an emphasis on the valuational method for the comprehension of the principle of individuation.

It is obvious from the foregoing discussion that the problem of the principle of individuation has significance specifically with reference to human personality. It is the personality which is individuated. Before we discuss the principle of individuation we must clearly know about the nature of human personality. The theories of human personality may be classified under three broad headings:

First, all possible potentialities of experience and behaviour are inherent in personality *a priori*. Hence, it may be said that creative teleology is completely and absolutely inherent in a personality.

Secondly, the mind of a personality is a *tabula rasa* with no inherent principles in it. Hence, in this type of theory there is no possibility of inherent teleology in a personality.

Thirdly, there is inherent teleology in a personality; but over and above this innate teleology a personality acquires some teleology through learning, training, 'conditioning' and the like. In brief, a personality has innate as well as acquired teleology.

Out of these three views the first one does not seem to be true. If it is taken for granted that teleology is inherent in a personality, then an individual is likely to develop his innate teleology spontaneously with the development of his personality irrespective of any kind of training, 'conditioning', social influence, learning and the like. But such a thing rarely happens in a human personality. For instance, an individual who is reared in a jungle by wolves cannot be expected to have a normal personality development. It seems, therefore, that teleology is not entirely inherent in a personality. The environment also puts its unique stamp on the personality of an individual.

The second view also does not seem to be true. Personality

is not an absolutely empty receptacle which later gets its content through the stimuli from the environment. If this view were correct any type of teleology could be grafted on a personality through training or 'conditioning'. In that case a person could be expected to develop into a poet if he was placed in the company of poets. But a person is not susceptible to all kinds of 'conditioning'. A dwarf, for instance, cannot be turned into a most agile athlete or a feeble minded person cannot be turned into a brilliant creative artist through any amount of 'conditioning'.

The third type of view which we uphold as the most satisfactory theory of personality makes sense. In our view each personality has a unique organization of psycho-physical entities which finds expression through the dynamic pattern of genetic materials brought into action through the fusion of a living spermatozoon and a living ovum. The innate teleology of an individual comes into existence as soon as a unique type of organization of psycho-physical entities finds expression through a specific pattern of genetic materials in a gamete. Each person has a unique nature or innate teleology which steers and regulates most of the natural and unlearned activities. Each person has a unique way of behaving in a given environmental situation. The innate teleology is the source of uniqueness in a personality. The original behaviour pattern of a person is governed by his innate teleology.

Apart from the innate teleology which is the original dower of a person there is another type of teleology that is acquired by an individual soon after birth through active response to the environmental stimuli. That part of the teleology in a personality which is not a product of learning, but which is inherited may be called 'innate teleology,' but that part of the teleology which owes its origin to the environment may be called 'acquired teleology.' Acquired teleology is incorporated in personality through learning, imitation, training, and general intromission of environmental influences. It was mentioned already that it was not possible to give an objective measurement of teleology because it was primarily a meaning or a value concept. It is possible only to give a valuation of teleology.

Innate teleology of an individual is the expression of the

superjection of the teleologies of his parents and ancestors. The superjection of the teleologies of parents finds expression through genetic materials which the offspring inherit through heredity. It is a well-known fact that the teleology of a genius is sufficiently expressed through his behaviour rather early in his life. Likewise the teleology of a feeble-minded person is expressed through his incoherent behaviour rather early in his life. It is an undeniable fact that each person has an innate teleology which is sufficiently expressed through his spontaneous mode of behaviour. It may be possible for a judicious observer to properly estimate the nature of innate teleology of a person through careful observation of the latter's spontaneous behaviour. It may also be possible to know something about the general possibilities of innate teleology through careful examination of the organizational aspect of an individual. For instance, the presence of a relatively large and complex cerebral organization in a person gives sufficient indication to the fact that there is the possibility of intellectual purpose in such an individual. Likewise, the presence of well-developed and sensitive sense organs and subtle and intricate muscular system gives indication to the fact there is the possibility of æsthetic purpose in such a person. The intellectual purpose is writ large, as it were, in the large and complex cerebral organization of a person, and the æsthetic purpose is writ large, as it were, in the sensitive sense organs and subtle and intricate muscular system of a person. However, innate teleology is not posterior to the organizational aspect of a personality, but it is prior to the latter. The organizational aspect of an individual provides innumerable channels for the expression of his innate teleology. Teleology presupposes the nature of the organizational aspect of a personality. The organizational aspect follows the teleological aspect of a personality for the teleological aspect goes a little ahead, as it were, of the organizational aspect. The nature of the organizational aspect is an index, as it were, of the nature of the teleological aspect of a personality. A judicious observer infers the nature of the teleological aspect by observing and examining the organizational aspect of a personality. A good judge of personality can only infer the possible nature of teleology, but he cannot measure it from the study of the nature of the

organization of a particular personality because teleology being a value principle can be estimated, but it cannot be measured. Only those persons are good judges of personality in whom the teleological principle is sufficiently well-defined for those who can adequately ascertain the nature of their own teleologies may also estimate the nature of teleologies in other persons. That is the reason why a highly enlightened saint has the capability of ascertaining the nature of innate teleology of a person in a more satisfactory way than a host of behaviourist psychologists. It is because of the fact that a saint can immediately decipher the meaning and the nature of creative purpose by observing the nature of organizational aspect of a personality, but behaviourist psychologists are unable to decipher the nature of the creative teleology in a person because they are unable to grasp anything beyond the organizational aspect of a personality due to their self-chosen mistake of discarding the psychic concepts from their methodology of psychological investigation. A little attention will reveal that the innate teleology is expressed spontaneously through the behavioural tendencies of a person from a very early period of his life. Biographies of great persons bear a testimony to this fact. A man of genius, for instance, is born with his talent which later becomes well-defined through favourable influences from the environment.

The locus of the innate teleology is in the personality, and the locus of acquired teleology is in the environment. An individual may incorporate a particular type of teleology or a set of teleologies from the environment into his own personality. The original locus of acquired teleology may be either in an external object or an individual or a situation or in the configurations of individuals, objects and situations in different possible combinations. The acquired teleology is incorporated into personality through learning, imitation, 'conditioning' and the like. Acquired teleology is grafted on the innate teleology of a person. Sometimes the acquired teleology is in perfect harmony with the innate teleology of a person. In such cases acquired teleology flows into the innate teleology of a person and gets perfectly harmonized with the latter. But sometimes acquired teleology is incompatible with innate teleology of a person. In such cases

acquired teleology behaves like a parasite on the innate teleology of a person. In majority of persons in the world in the present age acquired teleology is not compatible with innate teleology. The incompatibility of acquired teleology with innate teleology is the source of inconsistency in a personality. It is the source of tension within the personality and it is the source of anxiety for other individuals in a society. In other words, in a case of incompatibility there is internal tension between acquired teleology and innate teleology and this contradiction is bound to be there by the very nature of the situation. An individual may suppress this tension by trying to completely swamp the innate teleology by acquired teleology, but the greater are the attempts at forcible suppression of the innate teleology the greater are the possibilities of this tension becoming stronger. This is the nature of tension within a personality itself. Similar type of tension is there in the relation between an individual and a society. It is a matter of common experience that individuals in whom there is absence of compatibility of acquired teleology with innate teleology are generally regarded as unreliable persons. An acquired teleology is like a garment which can be discarded in favour of another. Consequently, unless an acquired teleology is perfectly harmonized with innate teleology and is consolidated in a personality, there is no certainty that an individual will not discard one acquired teleology in favour of another. In other words, in those individuals in whom there is no compatibility of acquired teleology with innate teleology, there are possibilities of occasional fluctuations in acquired teleology. In average persons one acquired teleology may be replaced by another in response to the demands of changing environmental conditions. Such individuals are like weather-cocks who change directions in accordance with the direction of the wind. Thus, individuals in whom there is no compatibility of acquired teleology with innate teleology become the source of anxiety for certain members of a society who have comparatively stable personalities. There are, however, certain persons in whom acquired teleologies are incompatible with innate teleologies, and yet acquired teleologies may stick on relatively permanently in such personalities. They are generally persons with fixed ideas and beliefs. They are generally members of custom dominated

backward societies. This point will be clear if we discuss the nature of different types of societies. It was stated earlier that the locus of acquired teleology is in the environment, particularly the social environment. Consequently, the nature of acquired teleology in a person is determined to a very great extent by the social environment. It is, therefore, necessary to study the nature of different types of societies in order to see how far and in what way the different societies influence the acquired teleologies of different persons.

In our view each social organization has its unique teleology. The nature of teleology of a social organization depends upon the nature of convergence of psychic aspects in contrast with the nature of convergence of the physical aspects of psycho-physical entities. The greater is the convergence of psychical aspects of psycho-physical entities of a social organization the more well-defined is the social purpose and the more far-reaching and deep is its influence on individuals. On the other hand, the lesser is the degree of convergence of psychical aspects of psycho-physical entities of a social organization the hazier is the social purpose and the more superficial is the social influence on individuals. In other words, the nature of organization and teleology of a society may influence the formation of acquired teleology in a person. It is necessary, therefore, to study the different types of social organizations and their respective teleologies. It is an obvious fact that there are societies of innumerable types. But all those types of social organizations cannot be discussed here because it is not the main theme of this chapter. However, for our convenience we shall classify societies into four major types, *viz.*, aboriginal societies, mediocre societies, civilized societies and cultured societies, and discuss them briefly here.

The aboriginal societies are the most primitive of all societies. These societies do not have any features of civilized and cultured societies. The members of aboriginal societies have almost no individuality. All members of such societies along with the tribal leader form one organized mass. Each member of such a society thinks, feels and acts in conformity with the codes of behaviour of the whole group. Since an aboriginal society has no culture it indicates that there is no conflux of psychic aspects

of psychc-physical entities of such a social organization. On the contrary, in an aboriginal society there is greater conflux of physical aspects of psycho-physical entities thereby resulting in the formation of very weak social purpose. The teleologies of such societies are so crude, trivial and superficial that it would be useless to talk of the compatibility of acquired teleology and innate teleology in the members of such a society. Generally acquired teleology is incompatible with innate teleology in aboriginal persons because acquired teleology is imposed by veteran and powerful members on the weaker ones of an aboriginal society. At rare moments when in the life of an aboriginal person acquired teleology is compatible with innate teleology such union of teleologies finds expression through different forms of primitive art. There is generally some spontaneity and beauty in primitive art since there is intromission of Nature's teleology into the personality of an aboriginal person. Since Nature's purpose is compatible with the innate teleology of an aboriginal person there is generally no artificiality and ostentation in primitive art. However, so far as the general behaviour patterns of aboriginal persons are concerned there is no compatibility of acquired teleology with innate teleology. Biological necessities constitute the most dominant force in aboriginal societies. The fundamental law of primitive society is the law of survival. Furthermore, since there is most meagre convergence of psychic aspects of psycho-physical entities in an aboriginal social organization weak and comparatively unalterable social teleologies may stick on to primitive personalities in the form of acquired teleologies. Consequently, there are a very few adaptive possibilities to changing environmental conditions in the members of an aboriginal society. The same pattern of acquired teleology may persist in the members of an aboriginal society for a very long time until such a society is confronted with destructive forces.

We shall next discuss the nature of mediocre societies.⁶ We call those societies mediocre societies which are half-way between civilized and aboriginal societies. Mediocre societies are pseudo-civilized societies. Such societies are predominated by traditions, customs, rules, regulations and the like which are more rational than in aboriginal societies. Customs and traditional codes of

behaviour are enforced upon the members of a mediocre society as a result of which individuals are coerced to accept the social teleologies. Consequently in a mediocre society acquired teleology is not generally compatible with innate teleology of an individual. Customs that are prevalent in a mediocre society are the expressions of certain practical necessities, but they are not the expressions of conflux of psychic aspects of psycho-physical entities of such a social organization. Individuals of a mediocre society incorporate social teleologies within their personalities for pragmatic ends. Intromission of social teleologies are rewarded and those which are rejected are either non-rewarded or punished. The veteran members of a mediocre society may change customs and ethical codes from time to time with certain pragmatic ends in view. There are possibilities of customs being changed, sometimes even very rapidly, and the members of a mediocre society may be swamped by waves of changing fashions and ethical codes of behaviour. The members of a mediocre society also rapidly mimic the patterns of behaviour suggested by the veterans bearing in mind the principle of reward and non-reward. The fundamental law of a mediocre society is the law of mimicry. Hence, there is a great deal of artificiality in the behaviour patterns of the members of a mediocre society. Since social customs and traditions are incorporated into a personality for pragmatic ends there is generally no compatibility of acquired teleology with innate teleology. If there are any signs of civilization in a mediocre society they are generally due to the imitation of genuinely civilized societies. Signs of civilization that are found in a mediocre society do not owe their origin to the creative teleologies of the members of a mediocre society, but to a civilized society which the members of a mediocre society mimic. Mediocre societies are, therefore, not civilized societies, but they are at the most semi-civilized societies. In a mediocre society, therefore, there are possibilities of mimicry of civilized societies on a very large scale exhibiting mimicry of technology, literature, art, dress, etiquettes, manners and so on. Some of the important signs of a mediocre society are lack of originality, novelty and spontaneity in all creative acts. A mediocre society is conspicuous by the absence of genuine progress of theoretical

sciences and consistent and comprehensive philosophy. Creativity is of a very low standard in a mediocre society. The members of a mediocre society do not generally incorporate acquired teleology freely and spontaneously in accordance with the promptings of their innate teleologies, but rather for realizing certain pragmatic ends. The innate teleologies of the members of a mediocre society are generally shrowded by incompatible acquired teleology and the possibilities of original creative purpose are considerably thwarted. Hence, the proportion of individuals who are sufficiently individuated in a mediocre society is very low.

Civilized societies are marked by their material advancement. In a civilized society there is partial convergence of psychical aspects of psycho-physical entities of the social organization. But the conflux of physical aspects still predominates over the psychical aspects of the psycho-physical entities of such a social organization. Consequently, it is found that in a civilized society philosophical theories generally have a strong pragmatic, utilitarian or materialistic bias. Philosophical enterprises are not generally directed towards the discovery of the various fundamental constituents of reality and their laws, but they are mostly directed towards the solution of practical problems of life and society. Scientific pursuits are generally abandoned before the discovery of the fundamental laws of Nature and their meanings. That is the reason why researches in sciences are not generally carried beyond a point when such researches do not any longer seem to yield practical results. On the contrary, in civilized societies applied sciences are developed to the greatest possible extent instead of the pure sciences. That is the reason why there is the tremendous achievement of technology in civilized societies. Material progress is generally at its maximum limit in civilized societies due to the great emphasis on technology. In civilized societies artistic creations are not generally the expressions of the creators' intuitive apprehension of reality; but rather the artistic creations are prompted by the urge for catering to the needs of the societies. Consequently, poetry, painting, drama, music and the like of a civilized society do not generally have any bearing on the problems of reality, but rather they mostly

reflect individual and social problems. They are generally drab, commonplace, and fall short of the criteria of universality. They have mostly local and temporal appeal. The cult of superficiality is generally rampant in every walk of civilized societies. The members of civilized societies are materially satisfied and contented, but they are not necessarily happy and contented from the emotional and intellectual points of view. They generally lack philosophical insight, religious sincerity and ethical keenness. Their primary aim is to devise various methods and techniques for getting along smoothly in life. Almost every form of institution in a civilized society is commercialized. In civilized societies the various types of social organizations are generally regarded as more important than the individuals. The governmental organizations, political parties, philosophical, scientific, literary, athletic societies and associations, clubs etc. decide policies and principles for their respective members, rather than giving sufficient freedom to the individuals to think on various problems for themselves. In other words, there is sufficient indoctrination of individuals in civilized societies by the different policies of the various types of social organizations. Acquired teleologies, therefore, are not in perfect harmony with innate teleologies in the members of civilized societies. There is only partial compatibility of acquired teleologies with innate teleologies in the members of civilized societies. That is the reason why the values created by the members of civilized societies have only pragmatic, superficial, local and temporary significance. Values are not created by them for their own sake.

Cultured societies are the highest form of societies on earth. The marks of cultured societies are comprehensive and consistent philosophical theories, advanced pure sciences, developed technology, subtle artistic and intellectual creations, enlightened ethical codes, religious fervour, and the like. In a cultured society there is sufficient conflux of psychical aspects of psychophysical entities of such a social organization. There is conflux of creativity in a cultured society. The larger is the number of creative personalities in a cultured society, the greater are the possibilities of the conflux of creativity. The greater is the conflux of creativity in a society, the more creative is the social

atmosphere. The conflux of creativity increases the unity and intensity of social purpose which in its turn is directed towards the potentially creative personalities of a cultured society and acts as natural stimulus for them. Potentially creative personalities have a spontaneous tendency for appreciating the influences proceeding from the creative atmosphere and they may incorporate some of the healthy and favourable influences into their personalities in the form of acquired teleologies. The conflux of creativity of a social atmosphere provides a natural environment for the potentially creative personalities for the creativity of the social environment has a natural affinity with the innate teleologies of human personalities. Therefore, acquired teleologies which are incorporated from the creative atmosphere into the potentially creative personalities are generally in mutual harmony with their innate teleologies. The intensity and range of creativity is sufficiently enhanced in potentially creative personalities when there is mutual harmony between innate teleology and acquired teleology. Innate teleology of a person is fundamentally creative. If the social atmosphere also becomes creative in its nature through conflux of creativity of some of the members of a cultured society, the potentially creative personalities also are able to fast develop their creative teleologies through intromission of creative teleologies from the creative environment in the form of their acquired teleologies. The creative teleology of an individual becomes well-defined through the conflux of innate creative teleology and acquired creative teleology. Thus, compatibility of acquired teleology with innate teleology strengthens the creative teleology of an individual. Conflux of creativity in a society provides innumerable possibilities for the intromission of those creative teleologies from the environment which are naturally compatible with innate teleologies of individuals. Moreover, conflux of creativity in a social organization not only provides possibilities for the intromission of favourable creative teleologies, but it also produces absence of necessity or compulsion in the process of intromission of such teleologies into the personalities of individuals. On the contrary, if there is greater conflux of physical aspects than the psychical aspects of psycho-physical entities in a social organiza-

tion, such a social environment offers barriers to the natural creative tendencies of personalities. Uncreative teleologies that are incorporated from a particular social environment into a personality offers resistance to the innate teleology of a person. Innate teleology has the greatest possibility of getting imprisoned within a personality by the artificial barriers created by the uncreative acquired teleology. Thus, the creative innate teleology may be encircled from all around, as it were, due to the intromission of acquired teleology into a personality from a non-creative social environment. It may be pointed out here that the description that is given above refers only to possibilities, but not to necessities. There are persons who have the unique capacity for incorporating favourable creative teleologies into their personalities from physical, social or cosmic environment in spite of the fact that they may live right in the midst of a society where there is maximum conflux of physical aspects of psycho-physical entities in a social organization. Likewise there may be persons who may refuse to incorporate favourable creative teleologies into their personalities even though they may live right in the centre of a society where there is maximum conflux of creativity. Those are, of course, exceptional cases. However, as a general rule the greater is the conflux of creativity in a society the greater are the possibilities of the members of such a society incorporating creative teleologies. Cultured societies provide the most suitable atmosphere for the intromission of favourable creative teleologies to the potentially creative personalities. In other words, there is the greatest possibility of acquired teleology coming into harmony with innate teleology of an individual who happens to be a member of a cultural society. Creative possibilities are liberated due to the compatibility of acquired teleology with innate teleology of an individual for which the greatest opportunity is provided by a cultured society.

Culture is one of the ideals for the realization of which the entire human race is striving down the ages. It must be mentioned here that by a cultured society we do not mean that all members of such a society are creative personalities. In fact, a great majority of persons of a cultured society are either mediocres or civilized, but since most of them have some adoration

for creative personalities and appreciation for their values the entire society is generally regarded as a cultured society. In reality there are a very few persons who are real creators of values in a cultured society. However, the values of the creative minority have a far reaching influence on most of the members of a society. It is due to the value creations of a few creative personalities that a society is called a cultured society. The fact that an extremely small creative minority has influence on the majority of mediocres clearly shows that the former have a deep and profound influence upon the latter. It may be expected, therefore, that when the number of genuinely creative personalities increases in a society the culture of such a society will become maturer and finer. As we study the history of the world we find that human race is progressively moving towards the ideal of culture in spite of occasional ups and downs.

Another important point may be briefly discussed here in connection with the classification of human societies into various types. It may be pointed out here that three important principles operate in human personalities and human societies, *viz.*, the laws of existence and survival, the laws of knowledge and appreciation, and the laws of creativity. The most dominant tendency in the individuals of an aboriginal society is to behave according to the laws of existence and survival. Innumerable methods and techniques are adopted by different individuals and different societies to suit various changing environmental conditions for existence and survival. The members of aboriginal and mediocre societies generally behave in accordance with the laws of existence and survival. Most of the societies of the world are still engaged in acting according to these laws even in this present age. Members of civilized societies generally behave in accordance with the laws of understanding and appreciation. Since the development of applied sciences and technology are the chief marks of a civilized society the main emphasis in such a society is on the operational and the rational methods of knowledge. But generally in a civilized society the methods of valuation of values are neglected. Moreover, in a civilized society intuition is rarely incorporated as a valid source of knowledge due to extreme pragmatic bias. Hence, the operational and the

rational methods of knowledge very often remain partial and inadequate due to the exclusion of intuition as a valid source of knowledge. One of the main uses of developed technology and applied sciences is power or strength. Power generates an urge in a civilized society for self-aggrandizement and domination over mediocre and aboriginal societies. Thus, one of the dominant tendencies of a civilized society is to impose its authority over aboriginal and mediocre societies. The members of aboriginal and mediocre societies imitate the ideals of civilized societies partly due to direct or indirect pressure of the latter and partly due to their lack of initiative, originality, and feeling of inferiority. In civilized societies the internal atmosphere is not sufficiently suitable so that its members may be able to individuate themselves. They do not also exert favourable influence on the members of aboriginal and mediocre societies whereby they may individuate themselves. They have power, but they have no vision, nor comprehension of the nature of reality. When one civilized society is confronted by another of its kind the most dominant urge in both of them is the trial of strength. Each civilized society tries its utmost for increasing its power for overpowering, and if possible, overthrowing other societies of its kind. Hence, the greater is the number of civilized societies in the world, the greater are the possibilities of tension in the civilized world. The possibilities of individuation are considerably minimized or even sometimes eliminated in a world of growing tension. On the contrary, certain conditions may be created in a civilized society through which the very antithesis of individuation may be produced in certain individuals in the form of conscription, indoctrination, regimentation of thought and behaviour and the like. The only way by which civilized societies may survive is through elimination of power for overpowering other societies through mutual agreement with other civilized societies. The only way by which civilized societies may co-exist in peace is by gradually replacing their military power by developing their pure sciences, axiology and philosophy. Thus, civilized societies will be able to raise themselves to the position of cultural societies through proper emphasis of pure sciences, axiology and philosophy with the ultimate aim of discovering the

various dynamic organizations and the laws of reality. Discovery of a new philosophical outlook through the harmony of sciences and axiology will open up many avenues for the creation of values, for value creation is possible only through clear comprehension of the nature of reality. Creative personalities create values so that others may appreciate. Appreciation of values by a large number of individuals leads to harmony and peace in a society. Appreciation is the fundamental law through harmony and peace are achieved in a social organization. It eliminates the possibilities of tensions, anxieties, hatreds and the like not only within the territorial boundaries of a cultured society, but even outside the territorial jurisdictions of such a society. The existence of a cultured society is, therefore, a great boon to the entire human race. It may serve as an ideal for emulation for other types of societies in the world. However, it may be pointed out that a cultured society which emerges out of a civilized society may have the possibility of stable existence which is a pre-requisite for further development. But if per chance a mediocre society is able to raise itself to the position of a cultured society through the astounding creative genius of some of its members it may have the possibility of reverting to its original position due to its lack of technological power and military strength. There must be, therefore, a natural process of transition from an aboriginal society to a cultured society by passing through the intermediate stages of mediocre and civilized societies. This process of transition may be slow or fast, but the transition must occur in its natural sequence if a particular society aspires to retain a stable position for further development. In reality, however, this natural sequence of transition of societies is very rarely found in the world. Very often it is found that the transition of a particular society from one form to another is random rather than orderly and systematic very much like the random quantum jumps and gene-mutations.

The upshot of this discussion is that the source of acquired teleology is in the environment, particularly in the social environment. Individuation takes place when there is compatibility between acquired teleology and innate teleology. Innate teleology of an individual is naturally creative.

Acquired teleology may also be creative in its nature if proper selection of this teleology is made by an individual from the physical, social and cosmic environment. In a case of compatibility of acquired teleology with innate teleology in an individual both the teleologies have the same orientation. In other words, in a case of compatibility between acquired teleology and innate teleology there is conflux of creativity within personality leading to individuation of a person. Now a question may be raised : how is acquired teleology incorporated into a personality? Does an acquired teleology get incorporated into a personality of its own accord without any choice on the part of a personality? Or is a personality responsible for making the choice of an acquired teleology? Our answer is that it is personality which makes the choice of an acquired teleology in accordance with its predominant needs. The needs of existence and survival must be fulfilled first prior to the satisfaction of any other needs. Likewise some of the most essential volitional, emotional, and intellectual needs must be fulfilled first, prior to the satisfaction of creative needs. It is true that there is the superjection of the creative teleology over against the organizational aspect of a personality. But the superjection of the creative teleology may be sufficiently retarded due to internal inconsistencies and instability of the organizational aspect of a personality. Furthermore, a person whose very existence is threatened by certain unfavourable environmental conditions cannot normally create values. To put it briefly, it may be said that will-to-create presupposes will-to-know and will-to-know presupposes will-to-exist. Large sections of the human race are still struggling hard for survival and gaining knowledge of the various organizations and laws of reality. However, there are certain hopeful signs in certain societies which give indications to the fact that certain members of some of the civilized societies are making genuine efforts for raising their societies to the status of a cultured society. In certain quarters of the intellectual world top priority is given by certain scholars to the study of the fundamental problems which have a philosophical bearing through implicit or explicit convergence of pure sciences and axiology. With gradual convergence of the different branches of sciences,

on the one hand, and the convergence of sciences and axiology, on the other, there will be ample chances for the discovery of the fundamental organizations and laws of reality. Clear comprehension of the nature of reality will foster in certain individuals the urge for the creation of values which will have universal appeal. Clear comprehension of the nature of reality will also enable the creative individuals to realize the ideal of culture in a society and thereby creating a social atmosphere where personalities will have the maximum opportunity for individuating themselves.

In summing up our discussion the question may be posed again : What is the principle of individuation? What is the principle which makes a person a distinctive and unique individual? Our answer to the question is that teleology is the principle of individuation. Will alone is not the principle of individuation, nor is feeling the sole individuating principle, nor even is logical coherence the individuating principle. In our view intellect, feeling and will are the different processes through which a person is individuated. For instance, a literary genius or a scientist or a philosopher is individuated through thought process; likewise, a poet or a painter or a musician is individuated through his unique experience and feeling; similarly, a social worker or a martyr or a political leader is individuated through his dominant and persistent will. Different philosophers made serious errors when they maintained that one or the other mental process was the principle of individuation. There are three aspects of the mind, *viz.*, cognition, affection and conation. These different aspects of the mind cannot exist in complete isolation from one another, but they are inseparably associated with one another even though one of the aspects may predominate over others. Consequently, one of the mental aspects cannot be exclusively regarded as the principle of individuation. In our view a person is individuated through the various mental processes, but these mental processes themselves cannot be regarded as the individuating principles. Creative teleology is expressed through the various mental processes. Creative teleology is the real principle of individuation. Innate teleology is the original creative teleology. The creativity of innate teleology

is considerably enhanced if it is nurtured by favourable acquired teleology. In other words, if acquired teleology is derived from a creative source, it nourishes the innate teleology, but if acquired teleology is derived from an uncreative source, it puts obstacles before the expressive tendencies of an innate teleology. That is, if acquired teleology is itself creative in its origin it is compatible with the innate teleology of a person; but if acquired teleology owes its origin to an uncreative source, it is not compatible with the innate teleology of a person. In our view compatibility of the acquired teleology with the innate teleology of person is the real principle of individuation.

There is an aspect of a human personality which can never be completely destroyed, suppressed or altered. We are here referring to the innate teleology of a personality. A person retains his relative uniqueness throughout his life. A person is born with his relative uniqueness. This innate uniqueness of a person can never be completely trained through any amount of 'conditioning.' Each individual has the capacity for creating and appreciating values from his unique point of view. In a way, therefore, each person has an innate artistic nature. Each individual has a natural and spontaneous urge for the creation of novel and original values. In this sense each person has a romantic nature. A person is romantic in the sense that he spontaneously creates novel and original values without following any pre-established rules. There are no set plans and definite rules for the creation of values. There are infinite variety of ways in which values may be created. A poet, for instance, may compose poems in an infinite variety of ways; he may formulate his own rules of poetry whenever he may think it necessary; in fact, he may compose poems in his own spontaneous style without following any definite rule whatsoever. An artist expresses his talent in a variety of ways. That is the reason why the artistic creations of a genuine artist are novel, original and diverse. A real artist is never satisfied by copying the values created by other artists. A work of art is not the expression of an artist's imperfect mind. It is not the expression of an artist's unfulfilled desires. But, on the contrary, artistic creations are the expressions of an artist's richness of the personality. That

is, when there is exuberance of thought or emotion or volition in the mind of an artist he expresses it in the form of philosophy, poetry, painting, music and the like. A musician, for instance, composes songs when he cannot but compose songs. A genuine musician transforms his entire personality into the music that he composes. A piece of music bears the unique stamp of its creator. Values are the actualizations of the ideas that are in the mind of an artist. We must point out here that we use expression 'artist' here in a very broad sense. In our view everybody is more or less an artist or is capable of being so if he is placed in a favourable environment. We, therefore, think that not only are the creators of fine arts artists, but also philosophers, scientists, social workers, political leaders, workers, peasants, intellectuals and the like are so.

In our view beauty is one of the common features of all values. All values have an æsthetic quality. We may point out here that we have used the term 'beauty' or 'æsthetic value' in a very broad sense. We do not mean by the term 'beauty' only the beauty of fine arts, but we use the term 'beauty' for the harmonious, symmetrical and æsthetic aspect of any value that is created by a creative personality. According to J. W. N. Sullivan, a great scientist may be regarded as an artist, and his scientific discoveries may be regarded as the works of art.²³ Henri Poincaré pointed out that there was an æsthetic element in mathematics and all scientific theories. Henry Margenau also opined that beauty and elegance were the important marks of a good scientific theory. The æsthetic value has a great significance in human life. The creation of æsthetic value has been one of the dominant urges in human personality from the dawn of human history.* The relics of the prehistoric man's artistic creations convince us of his keen æsthetic sense. Anthropologists have discovered that some of the primitive artistic creations refer back to 30,000 to 10,000 B. C. Percy Brown made an extensive study of the ancient Indian art and found that primitive artists had a natural gift for artistic expressions and the figures that they created had a considerable spirit. He

23 *Limitations of Science*, Penguin Books, p. 217.

pointed out that some of these artistic creations were thousands of years old.²⁴ Elliot Smith opined that the pre-historic man had a remarkable aptitude for pictorial art and craftsmanship.²⁵ Franz Boas also said in a very emphatic manner about the skill and subtlety of the primitive man's artistic creations. He remarked that some of the musical compositions of some of the primitive musicians were so subtle and intricate that even the skilled artists of the modern times found them very difficult to imitate.²⁶ He also observed that in primitive life science, religion and poetry were inextricably interwoven.²⁷ In primitive life all forms of experience were harmoniously united and blended. The study of primitive art demonstrates that creative impulse constitutes one of the fundamental teleologies in human personality. Moreover, the creation of æsthetic value seems to be one of the main aims of human personality. We, therefore, believe that when the creative teleology of an individual is thwarted he feels miserable and he may even develop an abnormal personality. A number of psychologists did some research in the field of abnormal art and they found that certain abnormal persons were capable of producing art some which had high æsthetic value. Max Simon made a number of studies on abnormal art and he found that the quality and structure of different drawings of abnormal persons differed according to their different abnormal tendencies. Lomboroso found that quite a large number of abnormal persons exhibited artistic tendencies, and sometimes of a high degree of complexity and subtlety. He observed that insanity facilitated artistic activity in persons who were not previously artists. In his view an abnormal person is able to produce art because his imagination is freed from all restraints.²⁸ Anastasi and Foley found that some of the artistic productions of certain psychotics were indistinguishable from the artistic productions of the normal artists both in style and content.²⁹

²⁴ *Indian Painting*, pp. 15-16.

²⁵ *The Origin of Civilization*, p. 21.

²⁶ *The Mind of the Primitive Man*, pp. 172-3.

²⁷ *Op. Cit.*, p. 226.

²⁸ *The Man of Genius*, p. 184.

²⁹ *A Survey of the Literature on Artistic Behaviour in the Abnormal*, p. 61.

Researches in the field of abnormal art show that artistic tendency is one of the most dominant tendencies in human personality. It seems that in certain cases of behaviour disorders the innate teleology of a person is able to express itself because the tension created by the acquired teleology is sufficiently relaxed. It may be, therefore, possible that extreme form of tension between the innate teleology and the acquired teleology in a personality may be one of the predisposing causes of psychoneurosis. In certain cases of psychoneurosis the thwarting influences of the environment may lose force and thereby enabling an abnormal person to give free expression to his innate teleology. An abnormal person, therefore, may produce different forms of art during insanity which he could not produce when he was normal due to adverse environmental conditions. The misery of an abnormal person may be due to the fact that the society of which he is a member did not provide him with suitable opportunities for the expression of his implicit creative teleology. Apart from the primitive and the abnormal art, the children's art bears testimony to the fact that creative teleology constitutes the fundamental nature of human personality. Poetry, painting, music, literature and the like of children give sufficient indication of the fact that they have a natural tendency for the creation of beauty in very rudimentary forms from very early stages of their lives. Children grow normally when their creative teleologies are relatively unrestricted. But their natural developments are hampered when their implicit creative teleologies are repeatedly and ruthlessly thwarted by the environment. All these instances show that creative teleology is one of the fundamental laws of human personality.

Creativity is the unified law of reality. The Absolute is the supremely creative personality. It has the maximum degree of complexity of its organizational aspect. It has individuality of the highest order. Creativity is also the individuating principle of finite personalities. It is the source of individuality and uniqueness. The greater is the intensity and range of creativeness, the greater are the possibilities of individuality and uniqueness in a person. Persons can be arranged in a hierarchy according to their individuality and uniqueness. Creativity is the principle through which psycho-physical entities get their emphasis, concen-

tration, organization and complexity. There is the superjection of the creative principle over the organizational aspect of a personality. Creativity is the general law which guides all spontaneous activities. It is the fundamental principle which gives orientation to all productive activities. It is the source of meaning and value. A personality which has creative teleology has meaning and value, and the values that it creates have also meanings. The values that are created by a creative personality partake of the creative teleology of their creator. Each value has unique meaning that was imparted to it by its creator. Creativity is the principle of change, motion and development. It is the highest form of activity. Dynamism is the expression of creativity. Creativity is the source of meaning as well as dynamism. There is, therefore, a necessary correlation between meaning and dynamism. The richer is the meaning of a value, the greater is its dynamism. A value which has poor meaning has comparatively lesser degree of dynamism than those values which have richer meanings. For instance, a poetry, painting or drama which is rich in meaning has universal appeal, but if it has poor meaning it may have the capacity for evoking appreciation in a very few persons. Certain values which are poor in meaning may have only local and temporary appeal. A value which does not have universal appeal is evidently poor in its meaning. Values can be arranged in a hierarchy according to the richness of their meanings and intensity of their dynamisms. Values of the highest order have simplicity and beauty. They have simplicity in the sense that they explain a wide variety of phenomena subsumed under them, and they have beauty in the sense that they have maximum internal coherence.

A value is created in an act of intuition. There is intense activity in a personality during an act of intuition. There is perfect co-ordination between cognitive, conative and affective aspects of a personality during an act of intuition. A creative personality has the intuition of an idea which grips his mind giving him rapturous delight and at first eludes his comprehension like an evanescent will-o'-the-wisp, and he mentally pursues it with frantic restlessness until he has a vivid intuition of the idea, and he feels a most poignant anguish until he is able to express his

idea in the form of a value. Thus, he comprehends an idea in an intuitive flash and gives expression to it in an indeterministic creative act. But even after a value is created, a creative personality goes on to create yet another value as he is pre-eminently a creative person. The romantic agony of a person is the source of his incessant creative activity. Mario Praz believed that a romantic idea could not be given a tangible expression for expression was too trivial in comparison to an idea. In his view a romantic idea exalts an artist, but he does not give an expression to his idea. A poet, for instances, sits in front of a forever blank paper, a musician listens to the marvellous concerts of his soul without making any attempts to translate them into notes. According to Mario Praz, expression of a romantic idea is tantamount to to decadence.³⁰ It seems to us that Praz exaggerated the inexpressibility of a romantic idea. An idea can certainly be expressed in the form of a value, and when an idea is expressed in the form of a value it is not tantamount to decadence. Each value is unique in its own way the parallel of which may not be found anywhere. A creative personality is never satisfied with the creation of a value or a set of values for his personality overflows with innumerable ideas and he feels a most poignant agony unless he is able to create values incessantly in novel and original ways. However, there is no doubt about the fact that a creative personality experiences a sense of inadequacy after the creation of his current value, and he hopes that he will be able to make better performance in future. There is a sort of mixed feeling in the mind of a creative personality, *viz.*, a feeling of inadequacy after the creation of the current value, and a feeling of joy in anticipation that he will be able to create a more perfect value in future. This sort of mixed feeling prompts a creative personality to create more and more perfect values incessantly. Each value that a creative personality creates is new, original and unique. A creative person is himself taken by surprise by his own creations even though he is himself the creator of his own values. He creates values in novel and original ways, and conven-

30 *The Romantic Agony*, pp. 14-5.

tions follow the values that were originally created like trails which mediocres cherish and imitate.

In each creative act a new and original value is created by a creative personality. A creative person is surprised, delighted and highly satisfied by the novel and original values that he creates. But he does not the harp upon the same theme over and over again. He does not linger on to his original theme till his originality becomes stale and hackneyed. He does not treat his values as fetishes. Values that are once created by a creative personality continue to exist as souvenirs. A souvenir in its common usage refers to a thing which is preserved to recall some place, occasion, person etc. with which a person had some emotional or intellectual attachment in the past. We extend the meaning of the term 'souvenir' in our philosophical theory. In our philosophical theory we regard those past values as 'souvenirs' which one may still appreciate on their intrinsic merits. A creative personality may preserve his past values as souvenirs and he may still have appreciation for them on their own merits. Likewise a person who is an appreciator of certain values may preserve them as souvenirs and he may have rational adoration for them. But certain persons regard some of the past values as supreme, final and unsurpassable. Generally they have morbid and irrational adoration for those past values. In our philosophical theory we shall call those past values 'fetishes' for which one has irrational reverence.

A creative personality is continuously on a creative advance and perennially gives new orientations to his creative acts. The Absolute is the supremely creative personality who perennially creates novel and original values. Its cosmic values continue to exist as souvenirs. None of its cosmic values is regarded by the Absolute as a fetish. Values are created by creative personalities for appreciation by others. A value is not purely subjective, but rather it is objective for it is the actualization of an idea. It exists objectively and it involves a unique meaning. That is the reason why it can be appreciated by others besides the creator. A value has spatio-temporal existence. The actualization of an idea has beginning in time, and its objectification involves space. Hence, a value is finite. A value is in a sense relative in its nature.

It is not absolutely, finally and unsurpassably true, good and beautiful for all times and all places. A particular value may be surpassed by the succeeding ones of infinite subtlety and richness. Hence, Keates' saying that 'a thing of beauty is joy for ever' seems only to be a half truth. Creative personalities cherish the past values as mere souvenirs. Each value fades in course of time like the pallor of senility as the new ones come into existence with radiant effulgence. The perpetual novelty of our world and reality is sustained by the incessant creative activities of finite creative personalities and the Absolute.

CHAPTER VI

THE NATURE OF HUMAN FREEDOM

The problem of human freedom is of vital importance in philosophy for there are hardly any philosophers or psychologists who have clearly understood the real implications of the term 'freedom.' Almost everybody in the world has some notion of freedom however vague and inadequate it may be, but almost nobody seems to have a clear and definite idea of freedom taken in its positive sense. Hence, there is a lot of confusion regarding the real implications of the term 'freedom,' and there is a hot controversy on this problem. Certain philosophers deny freedom of an individual altogether and they regard a finite individual as a mere victim of circumstances. They are popularly known as determinists. Certain other philosophers believe that freedom of the will means absolutely undetermined choice on the part of a finite individual. They are known as indeterminists. Certain other philosophers maintain that an individual is free in the sense that his volitions are determined by himself in the choice of an action. They are known as self-determinists. These are the three main trends of thought that have developed out of an age-long controversy which will be briefly discussed below :

I. *Determinism.* The advocates of determinism deny freedom of the will of finite individuals. According to determinists, the actions of finite individuals are determined by certain fixed laws and consequently, an individual behaves in almost the same way under the same given conditions. The actions of a finite individual are determined by his antecedents whether proximate or remote, *viz.*, heredity, character and the like. The environmental conditions have a great influence on shaping the personality of an individual. An individual responds to the environmental stimuli in a fixed way. J. B. Watson and other behaviourists maintained that the environment had a tremendous influence on shaping the personality and behaviour pattern of an individual. An individual responds to the stimuli in certain specific ways, and thus his behaviour pattern gets organized in

a particular way. The behaviour of an individual may be conditioned by changing the environmental conditions. Thus, an individual has no freedom of the will. He acts in the same way under the same given conditions in accordance with the laws of casuality. Hence, the actions of an individual are uniform under similar conditions; they do not occur in any other way. It is, therefore, possible to predict the behaviour of an individual if one has adequate knowledge of the antecedent causes. The actions of finite individuals are not free, but rather they are determined. Necessitarianism is another name for determinism. According to this theory, every event in the universe is determined by casual necessity. The determinists advanced many arguments in favour of their doctrine some of which may be briefly summarized below :

(1) Certain determinists believe that differences in the behaviour of individuals are due to the differences of their organic structures, particularly due to the differences in the nervous and the glandular systems. Some of the modern psychologists and physiologists maintain that certain maladjusted persons behave in a peculiar way due to diseased or deformed conditions of their nervous systems or glandular systems. The people of different nations also show differences in their tastes, temperaments, habits and the like mainly due to their differences in organic structures.

(2) Heredity is also considered to be an important factor in determining the personality structure and behaviour pattern of an individual. Persons behave in different ways due to their hereditary differences. Hereditary characteristics are transmitted from generation to generation. An individual cannot completely overcome the influence of his hereditary characters that he has inherited from his parents. Certain scientists like Lamarck, Jennings and others maintained that not only physical characters, but intellectual and moral qualities were also transmitted by the parents to the offspring through heredity. For instance, the children of criminal tribes are generally criminals. Thus, persons resemble their parents not only in their physique, but also in their mental and moral characteristics. It is true not only of families, but also of entire races. For instance, certain Germans think that

they have superior intelligence and greater political and ethical responsibility compared to other races in the world, since they belong to the Nordic race. Likewise, certain American whites believe that they have superior intelligence than those of the American Negroes. Similarly, certain people believe that the white races of the Western hemisphere of the world have superior intelligence, clearer ethical purpose, superior culture and the like than those of the coloured people of the Orient. Certain supporters of determinism, therefore, believe that differences in behaviour of individuals are mainly due to racial differences. Hence, the behaviour of an individual is not free; but rather it is determined.

(3) The environment plays an important part in determining the behaviour pattern of an individual. The environmental influences may even modify the personality structure of an individual. J. B. Watson, an enthusiastic advocate of environmentalism, claimed that the behaviour pattern of an individual could be completely conditioned through proper control of the environmental conditions. He asserted that a normal child could be turned into a teacher, or a poet, or a painter, or a musician, or a scientist through proper conditioning. He believed that a new generation of healthy men and women could be brought into existence, if children were trained by scientifically but humanistically trained child-experts and educators in well-equipped institutions from the very infancy. The behaviour pattern of an individual is determined by the environmental conditions.

(4) Certain determinists are of the opinion that the possibility of prediction of human conduct implies determinism. According to them, the future behaviour of an individual can be predicted by proper study of the antecedent causes. The actions of an individual are rigidly determined by the antecedent causes. Hence, the conduct of an individual can be easily predicted, if the antecedent causes of his behaviour are fully known beforehand. Likewise, the future courses of actions of a large number of persons can also be predicted by proper study of the statistical data. The possibility of prediction of behaviour of groups of persons has been partially established by statistical methods.

(5) According to certain philosophers, belief in the law

of causality presupposes a belief in some kind of deterministic order in the universe. In their opinion the law of causality is contradicted by the doctrine of the freedom of the will. A volition cannot be completely free because in that case it would mean that the will expresses itself without any antecedent cause. The doctrine of the freedom of the will is, therefore, inconsistent with the law of causality.

Apart from some of these main arguments there are many other arguments too in support of the doctrine of determinism which have been intentionally left out here for the sake of brevity. The advocates of determinism asserted on the basis of some of these arguments that finite individuals had no freedom of the will. The individuals are what the environment makes them. There is some truth in the standpoint of the determinists, but some of their arguments have to be accepted with reservation. Some of the arguments mentioned above will be critically examined in the following few pages :

(1) According to Gall, the mental powers of an individual are determined by certain elevations or 'bumps' in the cerebral structure. But later experiments in physiology and psychology proved that this was not true, and so the theory of phrenology was abandoned. However, it is recognized by psychologists and physiologists that certain cases of behaviour disorders were due to certain types of deficiency or disease of the brain or other parts of the nervous system. They also admitted that the under-functioning or the over-functioning of the endocrine glands had also a great deal of influence on the general behaviour of a person. There is some truth in the argument of the determinists that the behaviour of an individual is to some extent determined by the organic constitution of an individual. But the organic constitution of an individual is not the sole determinant of his behaviour pattern. There are other determinants which influence the behaviour pattern of an individual. It may not be, however, true that the racial differences in intelligence and ability were due to the organic structural differences of the different races. Such views are held in disrepute amongst scholars. In our view the innate potentialities of individuals can be developed through proper orientation of the activities towards creative ends and through

favourable creative atmosphere. Moreover, so far as the capacity for the choice of a particular course of action is concerned, which is one of the fundamental implications of the freedom of the will, the nature of the cerebral structure or the structure of the organism has very little to do with it. An individual has freedom of choice of an alternative course of actions irrespective of the nature of the structure of his organism.

(2) There is a great deal of truth in the argument of the supporters of determinism that the personality structure and the behaviour pattern of an individual is determined to a very great extent by heredity. But heredity is not the sole determinant of the behaviour pattern of an individual. We pointed out in the previous chapters that an aspect of a personality owed its existence to heredity and another aspect of it to the environment. We also pointed out that apart from the socio-cultural influence an individual had a creative teleology which steered his course of actions for realizing his unique creative purpose. Personal enterprise and initiative seems to be more important in determining the behaviour pattern of an individual than the influence of heredity. Children of great men of genius do not necessarily become great intellectuals, and the children of criminals do not necessarily become criminals. On the contrary, great men have sometimes risen from very mediocre families, and the progeny of great persons have sometimes degraded themselves into moral and intellectual weaklings. The argument of some of the determinists that heredity is the sole determinant of the behaviour pattern of an individual is definitely wrong.

(3) The argument of some of the supporters of determinism that environment has a potent influence on the behaviour pattern of an individual seems to have a great deal of truth. But the influence of the environment cannot be regarded as the sole determinant of the behaviour pattern of an individual. There are certain individuals who refuse to be influenced by certain aspects of or even by the whole of a society. Such individuals may 'suck in' their acquired teleology from the physical or the cosmic environment. An individual may acquire this creative teleology by his own enterprise and propagate his ideas amongst others. An individual has a unique creative purpose, not exclu-

sively due to his hereditary make up or social influence, but due to his own initiative and originality, due to the meaning and purpose that his personality embodies, due to his will-to-know reality and due to his dominant creative purpose. If social influences are favourable for the well-being and development of his personality, he imbibes a lot of inspiration from them. But if social influences are hostile and pernicious, they cannot affect him much if he is a person with well-defined creative teleology. The more a creative person finds himself in the midst of hostile and pernicious environment, the more his creative ideas are well-defined. He finds a great deal of difference between himself and the mediocres around him, and he realizes the uniqueness of his personality and the originality of his creative ideas in contrast with the mediocrity of the majority. He cannot be led astray by any allurements or baffled by any hindrances offered by the environment while he tries to realize his creative end. An individual with well-defined creative teleology retains his uniqueness in the midst of a hostile congregation of persons with his towering personality and ignores all attacks, criticisms and ridicules. He sticks to his principles without budging in the least even though his adherence to the principle involves risk of life, and he makes his novel contribution to the general well-being and progress of humanity. Therefore, the influence of a society whether favourable or unfavourable for the development of a personality or not is potent in the case of those persons who have not acquired well-defined creative teleologies. But the influence of a society is only one-sided in the case of genuinely creative personalities. That is, the social conditions which are favourable for the realization of human values can have positive influence in the case of genuinely creative personalities, but the social conditions which are harmful for the proper development of human personality and human progress may evoke negative response in the case of the latter. It is evident, then, that the mind of an individual is not like a *tabula rasa* on which the social influences invariably and irrevocably produce their impressions.

(4) The argument of some of the determinists that precise predictions of some of the future actions of an individual can be made does not seem to be absolutely correct. There are

different possible courses of actions that an individual may adopt at a given time; consequently, it may not be possible to make absolutely precise predictions of all future actions of an individual. An individual, for instance, may act in the same manner in a given circumstance on nine occasions, but on the tenth occasion he may act very differently. There are certain individuals who may take us by surprise by turning over a new leaf over-night. Hardened criminals, for instance, sometimes develop saintly outlook, and saints sometimes degenerate themselves into profligates due to some sudden change in their personalities. Human nature is so complex and so dynamic that even a thorough psychological analysis of an individual's nature cannot enable us to precisely predict his future course of actions. Sometimes we know a particular person to be decent and cultured and after observing him for a pretty long time we are convinced that he will always behave decently in future, but we may find to our utter astonishment that this particular individual gives up all his decency and culture at a moment of crisis, and at that time we may find him to be wild, aggressive and cruel. We cannot, therefore, make precise predictions regarding a person's future conduct. The personality of an individual cannot be completely judged by observing his conscious activities alone. According to certain psychologists the unconscious mind is teeming with painful memories, rebellious desires, feelings of inferiority and humiliation, ancestral prejudices, indecent sex wishes and the like. It is difficult to exactly ascertain when and under what conditions these repressed wishes will express themselves. There is no certain and definite method by which we can know the volitional tendency of an individual at a given time. Besides this, the personality of an individual is implicitly or explicitly creative. Hence, his actions are not absolutely stereotyped, but they have an element of spontaneity. A genuinely creative person is the creator of infinite variety of values. It cannot, therefore, be precisely predicted in what way an individual will create values in future. The value creations of a creative individual are free.

It must be acknowledged, however, that the general behavioural tendencies of a particular individual can be predicted to

a certain extent, of course, leaving a wide margin of possible errors in such predictions. Besides this, it is possible to predict to a very great extent the behaviour of masses of individuals. Future predictions that are made on the basis of statistical analysis of the different types of behaviour of masses of individuals have proved to be true to a very great extent.

(5) The argument of some determinists that the law of causality is not consistent with the doctrine of freedom of the will does not seem to be plausible. Freedom of the will does imply that the volition involved in an action is without any cause. An individual makes the choice of a particular course of actions freely. He himself is the cause of his actions. Volitions of an individual are not uncaused, but rather they are determined by the individual himself. The law of causality, therefore, is not inconsistent with the doctrine of the freedom of the will.

It is quite obvious from the proceeding discussion that the argument of some of the determinists that the environment, particularly the social environment, plays an important part in influencing the behaviour pattern of an individual contains a great deal of truth. However, this argument does not universally hold good in the case of all persons or groups of persons. There are certain individuals who are hardly influenced by a social environment. On the contrary, they persistently pursue their own ends and remain almost impervious to most of the social influences. There are certain individuals who even revolt against a social structure, and they in their turn try to influence the society of which they are members. However, there are certain individuals who act in conformity with a particular social standard under certain situations and react in a very different way under others. That is how one can account for criticisms and revolts in a society. A person or a group of persons can endure different types of social oppressions upto a certain extent, but when the latter become unbearable the former criticise them or revolt against them. This clearly indicates that a person or a group of persons have capacity for free thinking and free volition. Obviously, then, an individual cannot be regarded as a victim of circumstances in every walk of life. He refuses to be influenced by those social influences which are detrimental to the development of human personality. He has

the freedom of choice of an alternative course of actions from amongst different possible courses of actions. He is, therefore, himself responsible for his right or wrong actions. If an individual deliberately commits a crime, he is himself responsible for it for he has the capacity for distinguishing between right and wrong courses of actions. It cannot be denied, therefore, that an individual has his own share of responsibility in performing an action. Strictly speaking determinism cannot satisfactorily account for the moral responsibility of an individual and thus debars him from reward or punishment. Besides this, determinism cannot account for the facts of remorse and repentance. A human individual is not non-moral in his nature like a brute but he has the power of distinguishing between right and wrong, and he also knows that he has the option of choosing one alternative course of actions from different possible alternatives. He experiences joy when he succeeds in realizing his desired end, and dejection when he fails to realize his moral purpose. He feels sorry when he deliberately violates his moral principles. Remorse and repentance are due to the fact that the capacities for good as well as evil are equally present in an individual, and he has also sufficient knowledge of the fact that the choice of the right course of actions leads to the development of personality and the choice of the wrong course of actions leads to the degeneration of personality. That is the reason why an individual repents for his wrong course of actions of which he is himself the author. Rashdall rightly pointed out that both good and evil impulses struggled for mastery within an individual, and that remorse was due to the fact that an individual became conscious of his wrong deed.¹ The fact that an individual experiences the sense of guilt after the performance of a wrong action indicates that he has a fundamentally ethical nature.¹ Most of the determinists cannot account for remorse and repentance because according to most of them the environment is the most important determinant of human actions. Consequently, most of the determinists have a tendency to shift the blame of immorality from an individual to the environmental conditions. The argument of some of the determinists that an individual is a victim of

1 *The Theory of Good and Evil*, Vol. II, pp. 332-3.

circumstances does not at all seem to be sound for a human individual is not a thing to be drifted in any direction by the changing environmental conditions, rather he is a teleological personality. No environmental condition can restrict a person from doing his duty or coerce him to do what his conscience forbids him to do. An individual is attracted or repelled by the environmental conditions in accordance with the nature and strength of his creative purpose. William Temple rightly pointed out that credit was always due to a good character however unfavourable were the circumstances.² In connection with the theory of determinism we shall make passing reference to the views of a few advocates of this doctrine.

Thomas Hobbes was an advocate of determinism. According to him, human beings have no freedom of the will. Their volitions are determined by appetites, impulses and passions. In a conflict of motives a volition is determined by the strongest impulse and an individual simply plays the part of a passive spectator. In an act of deliberation there may be many wills of which the last is the cause of a voluntary action.³ An individual cannot perform an action freely because he has no absolute control over his will. He is not the master of his volitions. The law of sufficient reason is applicable to human actions; but a human individual is not subject to the law of necessity like other things. The actions of an individual are determined by his interests, inclinations, impulses and the like, but not by his free-will. The unconditional command of reason unadulterated by passions and sensibilities cannot have any influence on the mind of an individual. The will of an individual is determined by irresistible impulses and uncontrollable appetites. Thus, an individual acts, no doubt, but his actions are not freely determined by his will.

Hobbes' interpretation of human nature seems to be wrong. If human actions were determined by momentary impulses, appetites, passions etc., then in that case there would be no difference between human and animal actions. In fact, Hobbes

² *Nature, Man and God*, p. 239.

³ Hobbes, T., *English Works*, Edited by Moles Worth, Vol. I, p. 408.

himself admitted that human beings had no freedom of the will like all other animals. The differentia of human beings, according to Hobbes, consists in their power of speech. Hobbes' definition of human beings is definitely wrong. The differentia of human beings from other animals does not consist in the power of speech, but rather in their capacity for thinking and creating. Language is a system of symbols signifying certain things, feelings, ideas etc. That being so, animals, birds, reptiles etc. also produce certain sounds to signify certain things, feelings, situations etc. Thus, if Hobbes' view is carried to its logical conclusion one finds that he tended to place human beings on the same level with other animals. Hobbes maintained that an individual's voluntary actions were determined by his strongest motive of the moment, and that they were not determined by the self. But, in fact, impulses, desires, appetites etc. do not struggle amongst themselves for mastery, but rather they are organically related to personality and chosen by it with a definite end in view. It is the personality which judges the comparative values of the conflicting desires and freely chooses one of them which is in harmony with its teleological nature. The voluntary actions of an individual have ethical significance and he is responsible for his actions for he performs them knowingly, deliberately and freely. Therefore, Hobbes' deterministic interpretation of human behaviour seems to be wrong.

Hume was also a staunch determinist like Hobbes. According to him, the human actions are uniform because their actions are governed by strict laws of necessity. Moral necessity does not in any way differ from physical necessity. Voluntary actions of an individual can be inferred from their corresponding motives. Hume observed that human nature was uniform all over the world down the ages, and that the same motives produced the same actions.⁴ Liberty, according to Hume, is not opposed to necessity, but rather both these concepts are necessary in moral life. Motives are followed by their corresponding voluntary actions with uniformity and regularity because the will of a finite individual is strictly governed by the laws of necessity.

4 *An Essay Concerning Human Understanding*, Sec. VIII, p. 68.

Hume's view is open to certain objections. We admit that human actions are not causeless, but that they are subject to the law of causation. Personality is the source of all actions. An individual performs actions with an end in view. But Hume does not believe in a permanent and identical personality. Voluntary actions cannot be attributed to a series of momentary impressions. Further, Hume was wrong in believing that human nature was uniform all over the world through all ages. The contrary of what Hume believed seems to be true. Human nature is fundamentally dynamic and creative; hence, it seems to be impossible in principle that human behaviour should be uniform all over the world through all ages. The facts of evolution, social progress and change of values testify to the fact that change is one of the fundamental laws of reality. Besides this, Hume was unable to explain the real nature of necessity which he emphasized so much. He himself confessed to his inability to explain the real nature of causality. According to him, we get the idea of causation from experience; that is, after we observe that one event is followed by another a number of times a bond of association is established between two events in the mind. Causation is nothing but an idea of the customary conjunction of events. Hume's interpretation of causality is superficial. We do not derive the idea of causation from mere customary experience, but rather we discover the causal relation by observing objective connection between events. Hume, therefore, had no justification in asserting that there was necessity in human actions for he could not establish the real nature of necessity itself. Finally, the idea of liberty in human actions can have no significance for Hume ruled out the idea of a permanent and identical personality. Hume's doctrine of determinism is the logical corollary of his doctrine of sensationism.

Spinoza was also an advocate of rigid determinism. According to him, an action is free in so far as the cause of it is wholly contained in the nature of the past history of an individual. God alone is completely free. Finite individuals are only the modes of the divine substance; hence, they cannot be regarded as free, but rather they are dependent on God. They consider themselves to be free because they are ignorant of the true cause

of their actions. In reality the actions of finite individuals are determined by God. Will, according to Spinoza, cannot be called a free cause, but it can only be called necessary.⁵ Will is only a mode of thought; and therefore, no action can be determined by a volition but by some other cause, and that by some other cause and so on *ad infinitum*.⁶ God alone who is infinite can will freely.

Spinoza's conception of freedom cannot be criticized adequately without a prior criticism of his metaphysical system. According to Spinoza, God is the only substance and He is identical with the universe. God has no personality, teleology, intelligence and will. Here there are obvious difficulties in Spinoza's metaphysical system. How can God manifest Himself in His modes if He is devoid of will and purpose? If finite individuals are completely dependent on God, then finite individuals and their values are reduced to mere appearances. In Spinoza's metaphysical system finite individuals are reduced to mere puppets in the world drama of God. Strictly speaking, then, from the standpoint of Spinoza's metaphysics moral judgments cannot be passed on the conduct of finite individuals because they are not ultimately responsible for the choice of the alternative courses of actions. Spinoza's interpretation of human nature is inadequate mainly because of the deterministic bias of his metaphysical system.

II. *Indeterminism*. According to the doctrine of indeterminism, the volitions of an individual are not determined by any cause or motive. Volitions of an individual are not determined by any psychological or physiological antecedents. They are uncaused and motiveless. They are due to the undetermined choice or liberty of indifference. An individual chooses any one of the different alternatives without any reason or motive. His choice of a right or a wrong course of action is absolutely undetermined. He chooses a course of action by pure spontaneity of indifference. In other words, his actions are due to pure chance. This theory is known as the theory of unmotivated will.

⁵ *Ethics*, Part I, prop. XXXII.

⁶ *Op. Cit.*, Part II, prop. XLVIII.

According to this doctrine, a volition of an individual is a spontaneous decision of the moment. The actions of an individual are not determined by the past character or the future goal. Volitions, no doubt, originate from a personality, but on each occasion choice is made anew without reference to any past plan or future goal. That is the reason why a person's character, motives, desires, volitions etc. are not uniform because the choice is made freely on the spur of the moment without any cause. Therefore, the will of an individual is free in the sense that it is uncaused or undetermined by any prior condition. Will is absolutely undetermined, uncaused and unmotivated. This doctrine is also called 'libertarianism'. James Martineau is one of the advocates of the doctrine of indeterminism.

The doctrine of indeterminism is open to various objections. Freedom cannot be interpreted in the sense of capricious choice of an action. According to this theory, human actions are performed arbitrarily or whimsically. This view completely ignores the teleological nature of human personality. The actions of an individual cannot be regarded as mere chance happenings. Unmotivated choice of an action is inconsistent with human nature. Human beings have the special prerogative of reasoning or thinking; they have the ability of distinguishing between right and wrong. They choose those courses of actions which fit in with the nature and strength of their creative teleologies. The actions of an individual are not aimless or accidental as the indeterminists suppose, but rather they are guided by the idea of an end. Those individuals who have well-defined creative teleologies generally choose those courses of actions which are valuable for the development of their personalities. Their creative teleologies guide them in selecting the right courses of actions for their own well-being as well as for social well-being. Motives, desires, passions etc. do not flit about loosely in mutual isolation from one another, but rather they are organically related to personality. Desires are chosen by a personality in accordance with the nature and strength of its teleology and executes them into actions. The advocates of indeterminism tend to place rational and purposive human personalities on the level with idiots, imbecilies, insane persons and the like who perform their

actions whimsically and upon whose conduct moral judgments cannot be passed. An individual cannot be held responsible for his actions if he performs them capriciously and without any purpose. An action which springs by itself spontaneously without the guidance of a teleological personality is devoid of moral quality. Remorse, repentance, punishment etc. cannot be accounted for satisfactorily from the standpoint of the doctrine of indeterminism. Finally, the doctrine of indeterminism is inconsistent with the law of causality for uncaused will contradicts the law of causality.

III. *Self-determinism.* The theory of self-determinism has been in vogue since the time of Aristotle from whom most of the idealistic philosophers have borrowed the term. The theory of self-determinism gives more or less adequate solution to the problem of human freedom. According to this theory, the volitions are determined by an individual freely; they are not determined by environmental conditions as some of the determinists hold or completely undetermined by any plan or purpose as some of advocates of indeterminism maintain. An individual chooses a particular course of actions freely. He generally chooses those alternatives which are consistent with his teleological nature. Voluntary actions of an individual can have ethical significance only when he makes the choice of actions freely. Sorley rightly pointed out that an individual was thrown in the midst of conflicting interests and desires, and that he had the option of making a choice from amongst them.⁷ An individual is free to make any choice whether right or wrong. He is free because he is the author of his own actions.

According to certain advocates of the doctrine of self-determinism, the actions of an individual are determined by his character; hence, if the character of an individual is sufficiently known beforehand, his future conduct can be predicted to a certain² extent. Predictability of the future behaviour of an individual, therefore, is not inconsistent with the theory of self-determinism. Mackenzie pointed out that the uniformity of conduct followed from the stable character of an individual.

⁷ *Moral Values and the Idea of God*, p. 444.

He observed that freedom and necessity were equally necessary in moral life.⁸ However, it may be mentioned here that it is very difficult to predict the future conduct of an individual with absolute certainty because an individual can choose any one out of a multitude of alternatives. The actions of an individual are not uniform in the sense that they are rigidly mechanical; but rather the uniformity of conduct of an individual is due to the unity of his purpose. It is, of course, not necessary that the purpose of an individual should be capable of being realized only in certain fixed ways. A creative person does not necessarily follow any fixed rules under all circumstances, but rather he creates values freely and spontaneously without following any fixed pattern of laws. There are infinite variety of ways in which an individual may create values; and that is the reason why it is very difficult to predict the future behaviour of an individual with absolute precision.

The doctrine of self-determinism is generally considered to be the most satisfactory doctrine which adequately explains the problem of the freedom of the will. That is the reason why most of the philosophers are supporters of the doctrine of self-determinism. We shall mention the views of only a few philosophers who support the doctrine of the freedom of the will.

Kant maintained that freedom of the will could not be proved by speculative reason; but he admitted that the problem of the freedom of the will had a practical value. Freedom of the will, according to Kant, is a postulate of morality. An individual can perform voluntary actions freely because he has got the idea of the 'ought' or the categorical imperative of reason. He is free because he understands the supremacy of reason which intuitively the moral law. Kant believed in moral necessity because the moral life of an individual was guided by his inner will. He was an advocate of self-determinism in the sense that an individual chooses an action by his free practical will. He further opined that the phenomenal self was determined by inner necessity, but the noumenal self was free. Freedom, according to Kant, is a transcendental idea.⁹ The noumenal

⁸ *A Manual of Ethics*, p. 74.

⁹ *A Critique of Pure Reason*, Edited by Meiklejohn, p. 314.

self, which transcends the phenomenal self, freely and timelessly chooses volitions in accordance with the moral law. Volitions of a phenomenal self are determined by inner necessity; they are causally determined in time by their psychological antecedents; but they are free in the sense that the noumenal self chooses actions freely and timelessly. Thus, according to Kant, personality has a dual nature; that is, personality is determined from one point of view and free from another.

Kant's view of the freedom of the will involves certain difficulties. He drew a sharp line of demarcation between reason and passion, phenomenon and noumenon. It is doubtful whether such an absolute distinction can be made from the philosophical point of view. Reason and feeling are two aspects of the same mind; hence, feelings cannot be completely eradicated from a personality. A life of practical reason divested of emotions and impulses is nothing but a distortion of life itself. Feelings, emotions, sentiments and the like form an important aspect of a personality; hence, they should not be completely eradicated from the personality of an individual; they should be rather regulated by reason. Kant's distinction of the phenomenal and the noumenal self also does not seem to be valid. Kant himself admitted that he had no clear knowledge of the noumenon because it transcended our experience, and that it could not be apprehended through the categories of our understanding. How could Kant explain the behaviour of the noumenal self when he did not clearly know the nature of the noumenon itself? How could he explain the nature of relationship between the phenomena and the noumenon? How could the noumenal self determine the empirical volitions of the phenomenal self which are determined by their psychological and physiological antecedents? Rashdall interpreted Kant's view of the freedom of the will as indeterministic in its nature for the noumenal self, which selected an action timelessly, influenced the phenomenal self.¹⁰ Kant's view seems to be dogmatic for the so-called noumenal self seems to be nothing but a metaphysical dogma.

10 *The Theory of Good and Evil*, Vol. II, p. 308.

The phenomenal self, therefore, cannot be regarded as a shadow of the noumenal self.

Bergson was also an advocate of the doctrine of free-will. According to him, an individual is free in so far as his actions proceed from within his entire personality.¹¹ The idea of freedom cannot be properly translated into language. Freedom cannot be defined, but it can be just described by stating the nature of actions to the concrete self. The self is just free.¹² Freedom is a fact of which a more lucid description cannot be given. Sometimes Bergson regarded consciousness as synonymous with freedom.¹³ The argument of the determinists that the choice of a particular course of action is determined by the character of an individual can be easily refuted, according to Bergson, by clearly understanding the real meaning of character. Character is not different from the self, but it is the permanent attitude of the mind. The self is the author of all its actions. It is free because it is the creator of all its actions. Bergson refuted the argument of the determinists who maintained that the future behaviour of an individual could be predicted. Two psychical acts cannot be regarded as identical because they are two different moments in the life-history of an individual. The same effect does not occur twice because it is impossible to have absolutely identical conditions on two different occasions. Hence, the conduct of an individual cannot be predicted because the personality produces an action once for all and never to reproduce it again.¹⁴ According to Bergson, therefore, freedom of the will does not mean liberty of choice, but it means the process of free activity.

Bergson's view of human freedom is open to certain criticisms. The self, according to Bergson, is a succession of conscious states which simply acts and creates indefinitely. The self cannot be aware of the fact that it is free unless it enters into the *élan vital*. There is no teleology of the self. The self is just pure activity. It is not a permanent agent. Reason cannot

11 *Essays on the Immediate Data of Consciousness*, p. 131.

12 Bergson, H., *Time and Free Will*, p. 209.

13 *Creative Evolution*, p. 278.

14 Bergson, H., *Time and Free Will*, p. 201.

grasp the pure spontaneity and freedom of reality. It gives a distorted view of reality. In this sense Bergson's view is anti-intellectualistic and anti-teleological. His view of freedom of the will is inadequate due to the extreme form of one-sidedness of his philosophical theory. Reality is not pure Becoming as Bergson believed, but it is Being-Becoming. Teleology and intellect constitute the important aspects of personality. Creative activities of an individual cannot be regarded as aimless. A creative personality actualizes his ideas into values through his purposeful activity. Bergson, therefore, does not seem to be justified in adopting an anti-intellectualistic and anti-teleological attitude. Besides this, Bergson also left the idea of human freedom rather vague for he refused to define the concept of freedom.

Royce was also an advocate of self-determinism. According to him, finite individuals are the unique expressions of the Divine Will. An individual expresses God's Will when he acts consciously and freely.¹⁵ God has foreknowledge of human actions. All volitions of finite individuals are present at once in the eternal insight of God. Royce gave the analogy of a musician to explain this idea. The totality of temporal events including human actions is at once present in the vision of God just as a musical composition is present in the mind of a musician before the music is actually played.¹⁶ The freedom of a finite individual is dependent on God's Will because it is through His Will that an individual acts. The freedom of a finite individual is a unique part of God's freedom.¹⁷

Royce's view of the freedom of the will is open to certain objections. He overemphasized the power and importance of God so much in his philosophical system that finite individuals seem to lose their significance. He observed that finite individuals possessed their individuality and freedom through their dependence on God.¹⁸ He did not give any argument to show how, finite individuals retained their uniqueness and freedom

¹⁵ Royce, J., *The World and the Individual*, Series I, p. 468.

¹⁶ *Op. Cit.*, pp. 136-40.

¹⁷ Royce, J., *The Conception of God*, p. 295.

¹⁸ *The World and the Individual*, Series II, p. 417.

even though they were completely dependent on God. His assumptions in philosophy are dogmatic. Besides this, according to Royce everything in the universe is a finished fact in the vision of God. Such a view leaves no room for evolution, progress, freedom, responsibility and so on. By regarding the universe as a finished act of God Royce reduced the world into a block universe. James Ward remarked that Royce had a dominant tendency for reducing everything in reality to pure identity and thereby he excluded the possibility of the real existence of many.¹⁹ The world cannot be regarded as fixed and static with all the values eternally realized in the mind of God for such a view contradicts the actual experiences of human beings and the discoveries of sciences. Royce could not give a satisfactory account of human freedom for in his view finite individuals are reduced to mere marionettes who are completely subject to God's Will.²⁰

The problem of human freedom was discussed from the standpoints of determinism, indeterminism and self-determinism, and it was found that leaving aside the doctrine of self-determinism the other two doctrines were open to various objections. We shall now try to show that each one of these doctrines has significance from our philosophical standpoint. In our view, there are certain persons who are subject to deterministic laws, there are others who are subject to rational laws, and there are certain others who are subject to indeterministic laws. It may be mentioned here that we shall avoid the expression 'self-determinism' in our philosophical theory because we do not approve of the term 'self' as a true and complete description of personality. We shall use the expression 'rational freedom' in the place of the common expression 'self-determinism'. We shall classify human society into four main groups, viz., aboriginal societies, mediocre societies, civilized societies and cultured societies, and see what type of freedom is mainly prevalent in each type of society.

The most primitive form of human societies are aboriginal

19 *The Realm of Ends*, pp. 314-5.

20 *The Religious Aspect of Philosophy*, p. 483.

societies. Members of aboriginal societies have wild freedom. Their actions are partly determined biologically and partly determined environmentally. The prime needs of the members of aboriginal societies are the needs of existence and survival. Their actions are generally impulsive and irrational. Their chief aims are to search wildly for food, drink, sex and shelter. They attack their enemies violently, and they frantically search for security and shelter when they are threatened with danger. Their actions are generally impulsive, impetuous and irrational. They have almost no sense of individuality. Their identities are almost lost in the tribe of which they are members. Each tribe has a tribal leader or a group of leaders. The tribal leader or group of leaders decide upon the code of behaviour for all members of the tribe with severe threats of punishments whenever tribal rules are violated. The members of aboriginal societies are strictly bound by the group code of behaviour which is not based upon rational considerations, but upon blind and irrational biological considerations of existence and survival. They are not really free, but rather they are determined by their immediate biological necessities. The only freedom that they have is irrational and wild freedom.

Mediocre societies are of a higher order than aboriginal societies. The behaviour patterns of the members of mediocre societies are determined mostly by their environmental conditions. The behaviour patterns of mediocre persons are also partly determined by their heredity. Mediocre persons are mostly guided by their impulses, appetites, desires, needs, emotions, sentiments and the like. They are rarely guided by their reason since they lack sufficient philosophical insight. They are generally incapable of independent philosophical thinking because they are mostly guided by the principle of mimicry. Consequently, they are incapable of distinguishing between truth and error, and right and wrong from the philosophical standpoint. Hence, their actions are not rationally determined in the strict sense of the term for rational determination of actions presupposes rational understanding of the philosophical distinction between truth and error, and right and wrong. But generally they confuse truth with what works and produces concrete results, and error with

what does not work and produce any practical results, and good with what is useful and rewarding and evil with what is non-useful and non-rewarding. In other words, they generally confuse philosophical insight into reality with superficial pragmatic attitude towards life. For these reasons the actions of mediocre persons cannot be regarded as rationally determined in the strict sense of the term. On the contrary, customs, traditions, and other social norms have the greatest impact upon the behaviour patterns of mediocre persons. Mimicry is one of the most important guiding principles in the lives of mediocre persons. A mediocre person generally chooses a particular course of action bearing in mind the criteria of reward and non-reward. That is, he generally selects those courses of actions which are rewarded by the society of which he is a member, and avoids those courses of actions which are non-rewarded. Consequently, in spite of the fact that he himself makes the choice of a particular course of action, his choice cannot be regarded as autonomous in the strict sense of the term because his conduct is mostly determined by the social norm. For instance, there are certain types of mediocre societies in which conceit, hypocrisy, jobbery, snobbory, flattery, hero-worship and the like are virtually rewarded though such behaviour on the part of individuals may not have constitutional sanction. A person who bears in mind these criteria of reward and tries to realize his personal ends does not generally have the feelings of remorse and repentance because his behaviour pattern is in conformity with the unwritten social norms. Consequently, even if he chooses a wrong course of action his conduct is not severely blamed by most of the members of the society of which he is a member for the moral standard of the society as a whole is very low. Ethical values are the expressions of creativity. A mediocre society generally has a very superficial moral standard because it is a society with a very low degree of creativity. Persons who are the members of mediocre societies cannot generally incorporate creative teleology into their personalities from the social environment because there are very low degrees of creativity in such societies. In other words, conflux of creativity being very meagre in mediocre societies the possibilities of satisfactory compatibility between the innate teleology

and the acquired teleology in a person are very few. The actions of the most of the members of a mediocre society are, therefore, determined by the environmental conditions. The actions of most of the mediocre persons cannot be regarded as rationally determined because rational determination of actions presupposes a certain degree of philosophical insight into the nature of reality and moral consciousness which are generally lacking in mediocre persons. The behaviour patterns of most of the mediocre persons cannot be regarded as indeterministic because indeterministic behaviour presupposes a high degree of creativity which is also generally lacking in such persons. Consequently, the possibilities of the creation of values freely and spontaneously by mediocre persons are very few. The actions of mediocre persons are mostly determined by environmental conditions. Mediocre persons generally choose those courses of actions which are useful, rewarding and satisfying. They have only pragmatic freedom.

Civilized societies are on a much higher ethical, æsthetic and intellectual plane than aboriginal and mediocre societies. The actions of most of the members of civilized societies are generally rationally determined. The behaviour patterns of civilized persons are not solely determined by impulses, appetites, feelings and the like, but also by reason and conscience. The reason and the conscience of civilized persons generally harmonize and regulate their impulses, appetites, feelings and the like. In civilized societies importance is not merely attached to survival values, but also to ethical, æsthetic and intellectual values. That is the reason why the behaviour patterns of most of the members of civilized societies are not guided merely by survival needs, but also by intellectual needs. Whereas the most dominant urge of the aboriginal and the mediocre persons is will-to-exist, the most dominant urge of civilized persons is will-to-know since survival needs are fulfilled to a very great extent in civilized societies. That is the reason why there is the development of applied sciences and technology in civilized societies. Considerable efforts are also being made by certain civilized persons to develop and perfect the various epistemological methods. That is the reason why due importance is given by most of the civilized persons to rational and logical thinking. Social norms in civilized

societies are also based on reason. Hence, a civilized person has the fear of social criticism, general condemnation, and ostracism when he consciously and unconsciously, deliberately or under coercion chooses a wrong course of action. He has generally some consciousness of the philosophical distinction between truth and error, and right and wrong because he has pre-eminently a rational way of thinking and a scientific outlook on life. He generally experiences a sense of guilt and a feeling of remorse when he does a wrong action because he has a certain degree of consciousness of the ethical standard of the civilized society of which he is a member. He has a sufficiently clear idea of those actions which are blamable and those which are praiseworthy. There is partial conflux of psychical aspects of psychophysical entities in a civilized society, and thereby giving rise to partial conflux of creativity. A civilized society, therefore, has a partially creative atmosphere. Consequently, there are certain possibilities in a civilized person for incorporating creative teleology into his personality from a partially creative social atmosphere. There are, therefore, possibilities of partial or complete compatibility between the innate and the acquired teleology in a civilized person. As a general rule, however, there is only partial compatibility between the innate teleology and the acquired teleology, in a civilized person. In other words, a civilized person generally has a partially creative teleology. As a result of this partial compatibility between the innate teleology and the acquired teleology the conduct of a civilized person is generally rationally determined. His conduct is rationally determined because he has partially clear consciousness of the philosophical distinction between truth and error, and right and wrong. Rational determination presupposes a certain degree of rational and consistent thinking and a more or less clear consciousness of the ethical standard which has philosophical significance. Civilized persons have rational freedom in the sense that their actions are the expressions of their reason or conscience. Reason has a more or less fixed pattern of expression. Since rational freedom is invariably the expression of ethical reason it always involves a deterministic pattern. In rational freedom, therefore, there is compatibility between freedom and necessity. In a

rationally determined action there is inner necessity or necessity of ethical reason or conscience. Here we have used the expression 'ethical reason' in the same sense in which Kant used the expression 'practical reason'. Moreover, the actions of a civilized person is generally in accordance with the rationally founded social norms of a civilized society of which he is a member. Since the actions of a civilized person are generally in conformity with the social standards his actions have a deterministic pattern, and hence, they are predictable. Therefore, the actions of most of the civilized persons are not generally free, but rather their actions are determined by their own principles of ethical reason and the rationally founded social norms to which their actions conform. Civilized persons, therefore, generally have rational freedom.

A cultured society is the highest form of social organization that is conceivable on earth. There is the maximum degree of conflux of psychical aspects of psycho-physical entities in a cultured society. In other words, there is conflux of creativity in a cultured society. A cultured society provides a creative atmosphere to all its members. There is generally a large number of persons in a cultured society who incorporate creative teleology into their personalities from the creative atmosphere of the cultured society. In such persons there is generally perfect compatibility between the innate teleology and the acquired teleology. The greater is the compatibility between the innate teleology and the acquired teleology of a person, the greater are the possibilities of his creativity. The more well-defined is the creative teleology of a person, the more indeterministic is his mode of behaviour. Persons with well-defined creative teleology incessantly create novel and original values. Their values are the expressions of the intuitive apprehension of certain dynamic organizations of reality and the laws thereof. Since intuitions do not follow any fixed and rigid patterns there is indeterminacy in the act of value creations by creative persons. A creative person has flashes of intuition of revealed ideas in an unpredictable fashion. In fact, he is himself taken by surprise by his own values in spite of the fact that he is the creator of his own values. But there is no inner necessity in the process of creation of values by creative

personalities. There is no possibility of compatibility between inner necessity and indeterministic freedom for intuitions do not follow any rigid and deterministic patterns. Whereas reason expresses itself in a fixed and deterministic pattern, intuition expresses itself in an indeterministic and unpredictable fashion. In our view, only creative persons are genuinely free. The indeterministic behaviour of creative persons may be called creative freedom. A person with well-defined creative teleology incessantly creates novel and original values in indeterministic and unpredictable fashion. Satisfactory compatibility between the innate teleology and the acquired teleology is the prerequisite of genuine creative freedom. Any person who is able to establish internal harmony through the incorporation of creative teleology from the social or the physical or the cosmic environment or from all of them taken together into his personality has creative freedom. Creative freedom is capable of being realized by almost anybody through personal initiative and enterprise and through a long process of *sâdhanâ*. Creative freedom on the social level, which is freedom on a very wide scale, is possible only in a cultured society which provides most favourable opportunities for incessant creation of values to potentially creative personalities. The social atmosphere of aboriginal and mediocre societies are not at all favourable for the creation of values. The social atmosphere of civilized societies is partially favourable for the creation of values. The possibility of existence of creative freedom is partially there in civilized societies. It is through the effective utilization of this creative freedom that some of the creative personalities may transform their civilized societies into cultured ones. But the possibilities of smooth and easy transformation of a civilized society into a cultured one are considerably minimized due to various reasons. One of the most important reasons consists in the fact that a civilized society is dominated by various types of social norms and conformity to those norms is expected of every member of that society. Expectation of conformity to the social norms either by persuasive arguments or by threats of punishment considerably saps the possibilities of spontaneous creativity of creative personalities. In civilized societies there

are greater possibilities of rational freedom than creative freedom. Cultured societies, on the other hand, have greater possibilities of creative freedom. In cultured societies social norms are reduced in their importance, and each member of such societies, particularly each creative person, has his own norms of different varieties. A creative person, for instance, may have his own social, political, ethical, religious, æsthetic, and intellectual norms. As the norms of creative persons become well-defined, the social norms grow weaker in the inverse ratio. A cultured society is conspicuous by its absence of uniformity of norms. It is, on the other hand, a type of society with a wide diversity of norms having their locus in the unique individuals rather than in groups of individuals. It is a society with infinite variety of norms. Diversity of a cultured society does not amount to disorder or chaos, but rather there is unity in the midst of diversity in a cultured society. The uniqueness of each creative personality is the cause of infinite diversity, and the satisfactory working of the principle of appreciation is the cause of unity amongst creative persons in a cultured society. The possibility of creative freedom on the social level is possible only in a cultured society. Culture and creative freedom go *pari passu*. Freedom in a cultured society is creative-appreciative freedom. A cultured society, which guarantees creative freedom to its members, is the necessary pre-requisite of a really democratic form of state. The socio-political structure of a cultured society may be called creative democracy for it guarantees creative freedom to all its members.

From our philosophical standpoint, freedom does not merely have negative implications, but it also has positive implications. Freedom does not merely mean absence of restraints, but it means the existence of a favourable creative atmosphere in the presence of which creative possibilities in potentially creative personalities are elicited. A social atmosphere which positively and effectively helps all persons in eliciting the finest ethical, æsthetic and intellectual values from them may be called a really free society. In a free society an individual is not persecuted, punished or exterminated for holding independent views and expressing them through harmless channels provided such a view is not

detrimental to his own well-being or human well-being. It implies, therefore, that sense of security is one of the conditions of freedom. However, in a free society freedom of thought and freedom of expression are denied if they threaten cultural progress of an individual or a group of individuals. In other words, in a free society freedom of thought and freedom of expression are denied to an individual or a group of individuals if this freedom is misused for indoctrination of the naïve and the credulous individuals. All those possibilities which may lead to the indoctrination of the majority group of individuals by the minority or the minority group of individuals by the majority are ruled out in a free society. Freedom of opinion and freedom of expression which are misused for false and malicious propaganda purposes by an individual or a group of individuals are disallowed in a free society. Now the question may be raised: how to distinguish between right type of thinking from wrong type of thinking? Our answer to this question is that a right type of thinking is philosophically consistent, and a wrong type of thinking is philosophically inconsistent. The degree of philosophical consistency of an opinion depends upon its applicability for satisfactory explanation of the largest number of phenomena in the world and in reality. In other words, the philosophical consistency of a view depends upon the criteria of universal applicability that it satisfies. A clear idea of the nature of freedom, therefore, depends upon a clear comprehension of the nature of reality. Inconsistency in a philosophical theory finds expression through inconsistency in the idea of freedom itself. A philosophical theory which recognizes universal creativity must *ipso facto* recognize the possibility of incessant creation of infinite variety of values freely and spontaneously. The maximum possibility of positive freedom is there only in a society in which there is a creative atmosphere. However, even if there is absence of positive freedom in a society, a person with well-defined creative teleology may 'suck in' or absorb positive freedom from the physical or the cosmic environment. Ultimately, therefore, positive freedom depends upon the compatibility between the innate teleology and the acquired teleology of a person. Positive freedom is inseparably correlated with the creativity of an

individual. The more well-defined is the creative teleology of an individual the greater degree of positive freedom he has. A person with well-defined creative teleology is bound to absorb positive freedom either from the social or the physical or the cosmic environment or from all of them taken jointly. That is the reason why it is sometimes found that certain individuals who live right in the midst of a most corrupt and pernicious social environment are able to absorb creative teleology from the physical or the cosmic environment and are able to create values freely and spontaneously which have universal significance and universal appeal. Such persons generally retire from the pernicious social atmosphere either physically or mentally or both physically and mentally and draw their creative inspiration from the physical or the cosmic environment or from both of them jointly. The presence or absence of positive freedom in an individual depends entirely upon the nature and strength of the innate teleology of a person. If the innate teleology of a person is sufficiently well-defined and strong, he may by the sheer force of the magnetic power, as it were, of his creative innate teleology attract towards himself or absorb creative teleology from any region of reality and acquire a supremely creative personality. If, on the other hand, the innate teleology of a person is frail, hazy and undeveloped he may fail to attract creative teleology from any part of reality whatsoever. In our view, therefore, the locus of negative freedom is mainly in the social environment, and the locus of positive freedom is mainly in creative personalities. Positive freedom, in our view, is identical with creative freedom. The physical and the cosmic environments have as a general rule positive freedom since our world being a past value of the Absolute shared in creative teleology as well as creative freedom from its creator. That is the reason why any creative person is bound to get glimpses of the possible meanings of the various aspects of reality and experience a sense of freedom in the midst of the physical and the cosmic environments provided the latter or certain regions thereof have not been defiled by the collective sins of a certain group or groups of persons. Each region of the physical and the cosmic environments has its unique nature of creative

teleology and creative freedom. However, there may be absence of a creative atmosphere and creative freedom in a particular society due to the unsatisfactory working of the law of creativity and the law of appreciation. A cultured society which has a genuinely creative atmosphere extends the scope of creative freedom in our world. Creativity is the pre-requisite of real, positive, creative freedom.

All values are created freely by creative persons. There is always an element of spontaneity and indeterminacy in the creation of all novel and original values. Since spontaneity surpasses a rigid deterministic pattern the freedom which is involved in creative acts is indeterministic freedom. Indeterministic freedom is the real freedom since it is the universal accompaniment of creativity which is the unified law of reality. Indeterministic freedom is the invariable expression of creative freedom. Creative freedom is fundamentally different from the wild freedom of the aboriginals, pragmatic freedom of the mediocres, and rational freedom of the civilized. Wild freedom is mostly biologically determined, pragmatic freedom is mostly environmentally determined, rational freedom is mostly intellectually determined, and creative freedom is intuitively determined. There has been an evolution of the idea of freedom in human societies through æons of ages. Creative freedom is the highest type of freedom of all the different types of freedom. It always involves an element of indeterminacy and unpredictability. An element of chance is always involved in the creation of novel and original values. The element of chance is involved in creative acts in the sense that it is impossible in principle to predict in exactly what way and in what form a creative personality will create his future values. Even a creative person himself does not know in detail in exactly what way he will create his future values. The creative person himself and others may know only the general possibilities, but not the detailed actualities of values that will be created in future. From our philosophical standpoint, an indeterministic act is not a causeless and a purposeless action, but, on the contrary, it definitely involves cause and purpose. In the case of a creative person an indeterministic act is the expression of his creative purpose. Indeterminacy in the creation of

a value involves an element of unpredictability not only in the nature of the form and meaning, but also in the process of its actualization in time and space. Since the only mode of expression of creativity is through indeterminate acts it may not be absolutely meaningless if it is said that a creative act is not determined except by creativity itself which is almost synonymous with indeterminacy. The element of indeterminacy is present in all types of novel and original values irrespective of whether they are ethical or æsthetic or intellectual values. Reality itself and the various dynamic organizations thereof express themselves through indeterministic freedom. The indeterministic mode of behaviour of the non-living and the living phenomena have been almost conclusively proved by contemporary physicists and biologists. It may be also expected that when contemporary or future psychologists reach a stage of intellectual maturity they may be in a position to establish that human actions are fundamentally indeterministic. A careful glance at human history shows that the entire human race down the ages has been consciously or unconsciously aspiring to realise creative freedom. Creative freedom is the most valuable prize which every human personality may realize through persistent and sincere effort and through a long process of *sâdhanâ*. It is through this type of freedom that human personalities realize internal harmony, creative agony and and bliss. It is also through this type of freedom that human personalities realize the fundamental nature of their personalities and also experience a sense of kinship with the Absolute which is supremely creative and free.

It is quite obvious from what has been discussed so far concerning the nature of human freedom that only cultured persons are really free individuals and that cultured societies are really free societies. It is also quite clear from our description of culture that our view is fundamentally different from the views of most of the writers. Most of the writers generally use the terms 'civilization' and 'culture' synonymously. In our view, on the contrary, the terms 'civilization' and 'culture' have different connotations. There have been cultured persons scattered all over the world in all ages, but there have been hardly any cultured society anywhere in the world and in any period of human history.

Even Vedic India and the city states of Greece and Rome, which are generally described by scholars as highly cultured societies, cannot be regarded as really cultured societies at least from our philosophical standpoint because these societies recognized the institution of slavery and denied creative freedom to all their citizens. Perhaps cultured societies will appear on the world's living stage in future out of some of the contemporary civilized societies which are in the process of developing comprehensive and consistent philosophical theories and which are in the process of guaranteeing creative freedom to everybody. At present, however, there is not a single society anywhere in the world which guarantees creative freedom to all its members. Our view may be regarded as fantastic by certain critics who may urge that all civilized states guarantee positive freedom to all their citizens. It is true that almost all mediocre and civilized states all over the world guarantee positive freedom to all their citizens in the statutes of their respective constitutions. Such states generally guarantee positive freedom on paper in high-flown words and phrases, but for practical purposes most of those written promises have very little significance. Even the most highly civilized states of the modern world have flaws and loopholes in their constitution and any intelligent person is clearly conscious of them. For instance, there are states which claim to have democratic constitution and yet in some of these states freedom is virtually denied to some of their citizens whose pigments of the skin happen to be of a different colour than those of the ruling classes. There are states which assure equality and freedom to all working men and women in the world, and yet some of these states persecute and completely annihilate some of their citizens who think freely and express their opinions freely or offer criticisms against the defects of the policies of the ruling party. There are states which claim themselves to be welfare states guaranteeing equality of opportunity to all their citizens, and yet in some of these states certain intelligent and able-bodied persons are famished to death for want of employment and where freedom is the monopoly only of the people in power and so on. Therefore, freedom which is guaranteed by the constitution of a state may not necessarily be equivalent to actual freedom. There are states

in which freedom is virtually denied to some of the citizens at least even though they are guaranteed freedom by the constitution of the state. Constitutional freedom is a deception unless it is effectively implemented and really guaranteed to each member of a state. Implementation of freedom may necessitate all-round planning which is philosophically founded with the ultimate end of realizing the ideal of cultural diversity in a state. Planning for freedom presupposes planning for universal well-being.

A few fortunate individuals or group of individuals who have the monopoly of freedom try to perpetuate their monopoly through accumulation of physical power. Power is generally acquired for overpowering others. Physical power is realized when the purpose for the realization of strength is concentrated on matter. Likewise there is realization of psychical power when the purpose for the realization of strength is concentrated on mind. Physical power is generally utilized for physically overpowering those who are physically weak. Mental power is generally used for overpowering others who are naïve, credulous and intellectually weak by persuasive arguments. Mental power may be utilized for regimentation of thought in some form or the other which may be sometimes necessary for world-peace and amity. Immense good can be done to mankind when physical power is guided by mental power with the ultimate end of realizing creative freedom. But even mental power must ultimately annul itself for power is always for overpowering others physically or mentally. Ultimately power must be replaced by the principle of appreciation. Satisfactory working of the principle of creativity and the principle appreciation in a society will ultimately lead to the realization of creative freedom. The idea of freedom must have a philosophical basis. Human freedom depends upon clear comprehension of the governing law and the auxiliary laws of personality and also of the various dynamic organizations of reality and the laws thereof which have creative influence upon personality. The clearer and the more comprehensive is the knowledge of those laws in an individual, the freer is a personality, and the hazier and the more partial is the knowledge of those laws, the lesser is the possibility of freedom of such a person. Human freedom is the product of clear comprehension

of the principle of creativity which is operating everywhere in reality. The history of entire human race may be regarded as a process of evolution for the ultimate realization of creative freedom.

CHAPTER VII

THE NATURE OF HUMAN EVIL

The problem of evil was considered to be a major philosophical problem by some of the earlier idealistic philosophers and their critics. Some of the shallow religious thinkers also considered evil to be a fundamental problem of reality. The Judeo-Christian religion gave undue importance to this problem. The Buddhist religion is also centered round the main theme of evil and suffering from one point of view. However, we do not consider evil to be a fundamental problem of reality from our philosophical standpoint. We shall give a brief statement of our theory of evil after we critically discuss the views of some of the outstanding philosophers on the nature of evil.

According to Bradley, evil can be understood in three different senses, *viz.*, (i) pain, (ii) failure to realize an end, and (iii) the violation of the moral law. The fact that pain actually exists and that it is a form of evil cannot be denied. Pain is neutralized by the excess of pleasure. The smaller pleasures are swallowed up in larger composite pleasures. There is preponderance of pleasure in the universe over pain, and hence, pain as such ceases to exist in the Absolute.¹ Evil may be taken also in the sense of waste. It is a sort of confusion and failure. In human life most of our desires and aspirations are frustrated. The subordinate ends which are selected erroneously are evils. However, these ends cease to be evils when they are included in a larger end. Moral evil is also considered to be inconsistent with the harmonious unity of reality. Moral experience is in its essence self-discrepant for it aims at non-morality through the suppression of evil. It is both the source of evil and also the principle for the removal of evil. Moral evil results from inner conflict. However, it is necessary for the full realization of the moral ideal. It offers resistance to finite individuals who try to overcome the former through their moral efforts. But all these discords and

¹ Bradley, F. H., *Appearance and Reality*, p. 199.

differences are ultimately reconciled in the Absolute.² Thus, evil is finally absorbed in the Absolute.

Bradley's analysis of the nature of evil is incomplete and sometimes even inconsistent with his own philosophical system. His classification of evils into three different types is definitely incomplete, and his analysis of the nature of evil is inconsistent with his metaphysical system. Bradley failed to explain how evil was harmonized in the Absolute and yet the latter remained perfect. He himself expressed his inability in explaining the process of absorption of evil into the Absolute. Innumerable difficulties arise in Bradley's metaphysical system due to his extreme monistic bias. According to Bradley, the Absolute is pure unity without any diversity which leaves no room for change, progress, evolution, good, evil, creativity etc. A purely monistic interpretation of reality can neither properly account for human freedom nor human evil. William James remarked that Bradley's conception of the Absolute was a 'metaphysical monster'.³

Bosanquet's theory of evil is similar to that of Bradley. According to him, the Absolute being perfect reconciles evil within itself. Truth and error, beauty and ugliness, and good and evil are not heterogeneous in their nature, but rather they are all made out of the same stuff. The Absolute includes within itself error, ugliness and evil as it includes everything else. Evil is not fundamentally different from good, but it is only suppressed good. The Absolute contains evil though the former is not characterized by the latter. Evil springs from the same source from which good and value originate.⁴

Bosanquet's view of evil is open to the same criticisms that were offered against Bradley's view. Bosanquet like Bradley was unable to explain how evil was reconciled in the Absolute and yet the latter remained perfect. If Absolute is completely self-consistent and perfect, how can it include evil within itself? Bosanquet could not also show how evil could be regarded as a transcended good. Evils may be transcended by good, but they

² *Op. Cit.*, p. 203.

³ *A Pluralistic Universe*, p. 46.

⁴ *The Value and Destiny of the Individual*, p. 217.

cannot be regarded as transcended good. Evils do not owe their origin to good. Certain phenomena may be regarded as evil in themselves, for instance, infanticide, forced widowhood, slavery, murder, plunder, deception and the like are evils in themselves. Bosanquet's view seems to be wrong when he said that evil did not contain anything unique which could not be absorbed in good. There are certain phenomena which are evil by their very nature; and hence, they cannot be absorbed in goodness.

William James observed that the advocates of Absolute Idealism could not satisfactorily solve the problem of evil. He remarked that if the Absolute was identical with everything in the universe, then it must include evil also within itself; and that in that case the Absolute would be regarded as the source of evil which as a real phenomenon is existingly in the world. James, therefore, pointed out that the advocates of Absolutes Idealism could not satisfactorily explain how evil was contained in the Absolute and yet the latter remained perfect.⁵ He further pointed out that evil could not be ruled out as non-existent for it actually belonged to some of the irrational individuals who were, in their turn, parts of the Absolute. He, therefore, commented that the views of the Absolute Idealists were inconsistent because the problem of evil could not be satisfactorily solved from such philosophical standpoints which regarded the Absolute as absolutely perfect. According to him, his own theory of pluralistic universe is free from philosophical inconsistencies which are generally found in idealistic theories of reality. God, according to him, is a finite being. He is the fellow-worker of finite individuals. He co-operates with them to banish evils from this world. Evil is a positive fact. It is outside Him and opposes Him. God tries His best to eradicate evil from the world. Evil is temporary because goodness will prevail in the world due to the ultimate triumph of God.⁶

There are some elements of truth in James' criticism of the views of some of the idealistic philosophers who could not give a satisfactory explanation of the problem of evil. His criticisms

5 *Some Problems of Philosophy*, p. 138.

6 *A Pluralistic Universe*, p. 294.

hold good against the views of those idealistic philosophers who consider reality to be static and eternally perfect. However, James' theory of evil is open to certain criticisms. His belief that evil exists in its own right does not seem to be true for evil exists only with reference to personalities. Evil is not an independent entity or principle in itself. It does not oppose God and finite personalities as an independent object. James was not able to prove his thesis that the world was full of evils and imperfections. The world is not fundamentally irrational and perinicious as James believed. James believed that a finite God would be able to eradicate evils from the world with the co-operation of finite personalities. If God helps finite individuals in removing evils from the world, then the credit of eradicating evils will go to God and not to finite individuals and thereby they would become morally weak in due course of time. Finally, to assign the main rôle of removing evils from the world to God does not seem to be a philosophically sound position.

James Ward also maintained that Absolute Idealism could not satisfactorily account for the phenomenon of evil. According to him, if God were omnipotent, He would not have allowed the intrusion of evil in His best world. But God is not an infinite Being. He has only a finite personality. He is *primus inter pares*,—the supreme amongst equals. The existence of God is necessary for the removal of evil from the world. Evil is relative.⁷ A thing which is evil in one sense is good in another sense. Error is also a kind of evil. Evil is not absolute, but rather it is an inevitable incident in the process of an individual's pursuit of a right path. Moral evil is due to selfishness. However, evil does not exist in its own right as an independent principle.⁸

Ward's view seems to be correct when he opined that evil did not exist in its own right as an independent principle. He was justified in believing that evil was a phase in the process of realization of the moral ideal. But his view does not seem to be philosophically sound when he assigned the rôle of

⁷ Ward, J., *Naturalism and Agnosticism*, p. 385.

⁸ Ward, J., *The Realm of Ends*, p. 375.

eradicating evils from the world to God. To assign the rôle of removing evils from the world to God seems to be lowering the dignified position of the latter. Further, Ward's view seems to be wrong when he said that a thing which was evil in one sense was good in another sense. There may be some partial and superficial truth in the belief that a thing which is evil from one point of view is good from another point of view. But in reality there are certain phenomena which are basically evils, for instance, murder, deception, conceit etc. There may be different degrees of evils, but they cannot be regarded as transcended good.

Schiller also believed in the existence of a finite God. According to him, an omnipotent God excludes the possibilities of the existence of evils, imperfections etc. The existence of evils cannot be denied for they actually exist in the world. The existence of a finite God is necessary for banishing evils from the world. Had there been no finite God, the world have been swamped by evil. However, evil is necessary for offering resistance to the finite God. If God were omnipotent, evil would not offer any resistance which God could eradicate. In the absence of resistance the omnipotence of God is tantamount to impotence.⁹ A finite God with limited powers tries to remove evils from the world with the co-operation of finite personalities. God sustains evil in a sense.¹⁰

Schiller's view of evil is open to various objections. He assumed the objective existence of evil so that it might offer resistance to the finite God. The struggle between God and evil must continue perpetually in order to retain the finitude of God. But in that case the moment the finite God is able to eradicate evils from the world, he may become all-powerful and cease of to be a finite personality. Perhaps Schiller anticipated this difficulty; and therefore, he pointed out that God in a sense sustained evil for the latter must continue perpetually in order to offer resistance to the former. Obviously, Schiller argued in circle and was unable to offer a satisfactory explanation of

⁹ Schiller, F. C. S., *Riddles of the Sphinx*, p. 385.

¹⁰ *Op. Cit.*, p. 307.

the problem of evil. If God sustained evil so that His finiteness might continue, then He is either an immoral or a crazy person. Such a God cannot evoke religious inspiration in finite personalities.

According to Le Conte, evil is not real in itself; but it is a necessary means for the realization of the highest good. Evil is good in disguise; it is instrumental for the realization of the highest good. Thus, evil is a necessary condition for the realization of the moral ideal. If an individual were eternally perfect and sinless, he would not be able to distinguish between right and wrong. If a person were incapable of sin, he would be also incapable of virtue for virtue is realized through struggle with evil.¹¹ Physical evils are also necessary for human personalities.¹² Finite personalities acquire knowledge of the environmental conditions by struggling with the physical evils. They can be removed if finite persons acquire clear knowledge of the laws of nature. Nature is like a school mistress who chastises finite personalities relentlessly until they learn their lessons and acquire clear knowledge of the laws of Nature.¹³

There seems to be some truth in Le Conte's view that evil is a passing phase in the process of realization of the moral ideal. Evil serves as a foil, as it wert, in fully bringing out the fundamental nature of goodness. Henry Jones expressed the same idea by pointing out that moral evil was justified in the sense that goodness became conspicuous in contrast with the former.¹⁴ It is, however, not absolutely necessary that evil must exist in order that the best features of goodness may become conspicuous. Virtue may shine by its own merit even in the absence of evil. The defect of Le Conte's view lies in the fact that he overemphasized the importance of evil for realizing the moral ideal. His view seems to be doubtful when he asserted that finite individuals would be incapable of realizing virtue in the absence of evil. His explanation of the nature of evil, therefore, seems to be unsatisfactory.

11 Royce, J., *The Conception of God*, p. 72.

12 *Op. Cit.*, p. 73.

13 *Op. Cit.*, p. 74.

14 *A Faith that Enquires*, p. 246.

A few philosophical theories of the nature of evil were critically discussed in the preceding few pages and they were found to be philosophically inconsistent or unsatisfactory. A brief exposition of the nature of human evil will be given below from our philosophical standpoint. We shall trace the origin of human evil in the light of its cosmic background.

The Absolute is the supremely creative personality. It perennially creates novel and original cosmic values. Each cosmic value is perfect in itself. Yet the cosmic values that are created by the Absolute at successively later stages of its creative activities are infinitely richer, finer and subtler than the previous ones. The brilliance of each preceding value is eclipsed by the magnificence of the later values. Each cosmic value contains within itself an anticipatory evil in the sense that it will be excelled by succeeding values of considerable richness and subtlety. In other words, each cosmic value by its very nature involves an anticipation that it will appear to be considerably pale in the presence of succeeding values which by their very nature will be richer and subtler. It is a cosmic evil when a cosmic value becomes pale in the presence of succeeding values of greater richness and subtlety than itself. The anticipatory evil of a cosmic value owes its origin to the romantic agony of the Absolute. The Absolute writhes within itself for the incessant creation of novel and original values of progressively greater and greater richness and subtlety. The romantic agony of the Absolute is an evil in a philosophical sense on the plane of reality. Thus, evil in its philosophical sense is ultimately grounded in reality.

Each cosmic value shares in the creative teleology of the Absolute when it is actually created. Each current cosmic value has more or less clear and vivid consciousness of the current creative teleology of the Absolute because the conscious creative teleology of the latter which ingressed into the former is still vivacious and well-defined in it. It has clear comprehension of the Absolute's current creative teleology because the creative comprehension of the latter is directly oriented towards the former. But since the Absolute is supremely creative it goes on to create another value of infinite subtlety and richness than

the previous one. Consequently, now that the creative comprehension of the Absolute is withdrawn from the previous cosmic value the teleology that the latter derived from the former loses its original vivacity and its teleology gradually grows dim and hazy with the lapse of time. The gradual waning of the derived teleology of a past cosmic value of the Absolute and its subsequent haziness is the source of cosmic nescience. Our world, which is one of the past cosmic values of the Absolute, has the same fate. Perhaps our universe was conscious of the creative teleology of the Absolute when it was actually created by the latter. But now that the creative comprehension of the Absolute is withdrawn from the universe the teleology that the latter shared in from the former became hazy and obscure due to lapse of time. That is the reason why our world and its evolutes do not have clear comprehension of the nature of the Absolute. Some of the evolutes of our world are conscious personalities. Finite personalities who have evolved out of our world have individual nescience. Individual nescience owes its origin to cosmic nescience. It is the source of human evils. It is evident, then, that human evils are ultimately cosmically grounded. Nobody can escape individual nescience which he has inherited from the world out of which he has evolved. But everybody can, if he wishes, eradicate his individual nescience by his persistent effort to have clear comprehension of reality and by his dominant urge for creating novel and original values. In fact, the history of human race may be regarded from one point of view as a continuous struggle against nescience either unconsciously or consciously with the ultimate end of gaining clear and comprehensive knowledge of the creative nature of reality and its various dynamic organizations. There is a progressive process of transcendence of individual and social nescience through different stages of development of human history. Consequently, there are lesser degrees of individual nescience in the members of mediocre societies than in the members of aboriginal societies, and lesser degrees of individual nescience in the members of civilized societies than in the members of mediocre societies and so on.

Both individual nescience and social nescience owe their origin

to cosmic nescience. Individual nescience is the source of evil on the personal level, and social nescience is the source of evil on the social level. Social nescience has its impact upon individual nescience. It reinforces individual nescience. Nescience on the individual level or the social level has a retarding effect on the creative upsurge of an individual or a society.

From our philosophical standpoint the predominance of the physical aspects over the psychical in a dynamic organization of psycho-physical entities is the cause of nescience. In other words, nescience is due to the waning of creativity in a dynamic organization of psycho-physical entities. Conflux of physical aspects in an organization of psycho-physical entities leads to the haziness of its creative teleology. It is the cause of nescience. Nescience offers resistance to the creative upsurge of finite personalities. It is the source of immobility and uncreativity. Evil, therefore, is not an appearance. It is not a mere outcome of unsatisfactory inter-personal relationships in a society. It is not explainable merely from the psychological and sociological points of view, but it is also explainable from the philosophical point of view. It is real.

Nescience is the cause of incompatibility between the innate teleology and the acquired teleology of a person. It was mentioned in the previous chapters that there are two different types of teleologies in human personality, viz., the innate teleology and the acquired teleology. Of these two types of teleologies the innate teleology of a person is creative by its nature. However, the creativity of an innate teleology is not equally well-defined in all persons. The nature of creativity of the innate teleologies of persons may be arranged in a hierarchy ranging from the most simple and weak form of creativity to the most complex and intense form of creativity. Nevertheless, whatever is the degree of creativity in finite persons it is an undeniable fact that innate teleologies of persons are by their very nature creative. Innate teleologies are common to all persons. The innate teleology persists throughout the life time of an individual. The same type of acquired teleology, on the other hand, may not be common to all persons. Different persons may have different types of acquired teleologies. There may be certain persons in whom

acquired teleologies may be incompatible with their innate teleologies. Incompatibility of the acquired teleology with the innate teleology of a person is the source of evils. The choice of a teleology which is made by a person from the environment is likely to be incompatible with his innate teleology due to his individual nescience. The teleology that a person incorporates from the environment may be either creative or uncreative. A person is unable to discriminate between creative and uncreative teleology that he has to incorporate into his personality from the environment due to his individual nescience. Deficiency in the power of discrimination between creative or uncreative environmental teleology is due to the weakness and haziness of the innate teleology of a person. The haziness of the innate teleology of a person is due to the imperfect superjection of the low degrees of parental creativity and racial creativity. A person may, therefore, inherit parental and racial nescience particularly when there is imperfect superjection of creativity by the latter.

The innate teleologies of persons are constant, but their acquired teleologies are variable. The nature of incompatibility between innate teleologies and acquired teleologies of persons may be of infinite varieties. The nature of evil is determined by the nature of acquired teleology as a variable which is incompatible with the innate teleology of a person. One of the greatest causes of incompatibility between the innate teleology and the acquired teleology of a person is due to the fact he is unable to distinguish between instrumental values and intrinsic values. Instrumental values are not ends in themselves, but rather they are helpful for the realization of intrinsic values which are ends in themselves. Ethical, religious, æsthetic and intellectual values are intrinsic values because they are created or appreciated for their own sake. Biological needs of persons have instrumental values. They have the most pressing demands upon a personality for immediate satisfaction. Hunger, thirst, sex, parenthood and security are some of the most important biological needs. When a person wrongly considers these biological needs to be ends in themselves he becomes the source of evils. For example, hunger and thirst may give rise to the vice of gluttony, sex may give rise to voluptuousness, parenthood

may give rise to irrational attachment for offspring, security may give rise to laziness and timidity when these biological needs are regarded as ends in themselves. At later stages of human development certain persons erroneously considered wealth, power, prestige and fame to be ends in themselves. But, in fact, wealth, power, prestige and fame are instrumental values. Extreme attachment for wealth may give rise to the vice of miserliness, inordinate love of power may give rise to the vices of impetuosity, domineeringness and intolerance of criticisms, extreme concern over prestige may give rise to the vice of pride and vanity, and insatiable desire for fame may rise to the vice of conceit. At still later stages of human development when persons acquire certain degrees of intellectual and creative excellence they may erroneously regard some of the values that they create as supreme, final, absolute and unsurpassable. They may have irrational reverence for some of their values. In other words, they treat their values as fetishes. It is a form of evil to treat values as fetishes. The creative teleology of a person expresses itself through incessant creation of novel and original values. But if the creative teleology of a person is arrested at a particular stage and it expresses itself through the creation of stereotyped and hackneyed values, then it is nothing but a form of evil. It is a form of evil when the creativity of a person reaches a stage of stagnancy. Thus, a person whose creative teleology is arrested at a particular stage generally treats his past values as fetishes instead of regarding them as souvenirs. For instance, when a person creates ethical, religious, æsthetic and intellectual values in a fixed and stereotyped fashion, and all possibilities of giving new orientations to creative teleology are ruled out there is evil. Thus decadence in the creative teleology of a person is an evil, and irrational adoration for values that were created in the past is also an evil. For instance, when a playwright takes morbid delight in witnessing his dramas enacted on the stage over and over again and thinks too highly of them every time or when a painter displays his old paintings over and over again in different art exhibitions or when a musician plays upon his old compositions repeatedly in different music conferences or when an orator delivers his set speeches in different meetings

and assemblies or when a scientist harps upon his old theory without any variation whatsoever in different books, journals and bulletins or when a religious person untiringly repeats his old and hackneyed sermons in different religious gatherings, he becomes a source of evil. The creative upsurge of such a person is arrested and he has no other alternative but to cling to his past values and virtually worship them. The decadence of creativity on the part of creative persons has a baneful influence on a society of which the former are members. Decadence of creativity brings about stagnancy in a society in which persons with arrested creativity are worshipped as heroes and the stereotyped values of the latter are worshipped as final and unsurpassable. In such a general decadence of creativity creators as well as appreciators of values gradually develop obliviousness of the nature of creativity as the universal law of reality. To use Milton's expression such persons do not know how to move on 'to fresh woods, and pastures new', but they remain creatively immobile in a cess-pool of creative stagnancy, as it were, and they become the source of hosts of evils. It may be, therefore, said with a slight modification of Tennyson's language that the old values must be replaced by the new ones lest the old ones treated as fetishes corrupt the world.

The nature of evil^o was discussed so far more or less on the individual plane, and it was shown that individual evils owe their origin to individual nescience. Now we shall discuss the nature of evil on the social plane. Evils which originate on the social plane adversely affect a large number of persons in a society.

Evils on the social plane owe their origin to the imperfect working of the principle of appreciation. Evils on the individual plane are due to one's deficiency of the power of discrimination between creative and uncreative teleologies that one is likely to incorporate into his personality from the environment. In other words, evil on the individual plane is due to the selection of an uncreative teleology from the environment and its incorporation into the personality. To put it briefly, evils on the individual plane are due to imperfect working of the principle of creativity of a person hampered by his individual nescience. Evils on the

social plane, on the contrary, are mainly due to lack of proper understanding of the values created by others in a society. Social evils owe their origin to social nescience. Prejudices, superstitions, false beliefs and the like are social in their origin in the sense that they are inculcated in the naïve and credulous persons through social norms introduced by the veteran members of a society. Most of the members of a society, barring cultured societies, are governed, to a very great extent, by the various social norms. The behaviour patterns of most of the members of a society are generally in conformity with the various social norms. Conformity to a social norm is a form of evil. It destroys the very foundation of creative freedom and creative teleology in a person. It makes the behaviour pattern of an individual fall into a deterministic pattern. Consequently, the possibilities of creation of novel and original values by an individual through indeterministic creative acts are considerably eliminated. Conformity to social norms is, therefore, baneful. In a society the norms of one group of persons may be different, sometimes even very radically, from the norms of other groups. Intolerance, hatred, jealousy and the like of one group of persons by another in a society may be due to the fact that the set of norms of one group of persons is opposed to the set of norms of another group of persons with the result that the different groups of persons with loyalties to their respective norms generally come into clash with one another. Social evils may range from the smallest social unit to the largest social group and there may be a wide variety of evils in each social organization. For instance, there may be family quarrels, academic indoctrinations, occupational maladjustments, communal strifes, religious bigotries, social oppressions, inter-institutional jealousies, party rivalries, state coercions, racial hatreds, international tensions and the like. All these social evils owe their origin mainly to the imperfect working of the principle of appreciation. One social group may either remain in isolation from other social groups or may engage itself in strife with them. Loyalties of persons to their respective social groups are generally narrow, irrational and parochial. One group of persons cannot appreciate the values created by other groups of persons because their

respective values are shallow and superficial in their meanings. The values that are created by the mutually intolerant groups are generally very poor in their standards. They have generally local and temporal appeal. Unless the values of one group of persons far surpasses the values of other groups in richness of meaning, the latter may not be inclined to appreciate the values of the former. The members of one group of persons may appreciate the values of other groups of persons only if the values of the latter satisfy the criteria of universal appeal. The principle of appreciation cannot function properly in a society unless shallow, superficial and irrational values are replaced by values which are rich in meaning and which satisfy the criteria of universal appeal. It is evident, then, that ultimately evil is due to low degree of creativity of persons in a society. It is also quite obvious that individuals are more important than social organizations and institutions. In most of human societies, barring the cultured societies, individuals are regarded as subordinate to various types of social organizations. Subordination of individuals to social organizations leads to indoctrination and regimentation of thought and behaviour. Individuals are deprived of their creative freedom and individuality, if social institutions and their policies are considered to be of supreme authority. But if in a society the various social organizations are oriented towards the realization of creative ends of individuals, there is gradual waning of evils. Human history may be regarded from one point of view as a gradual process of transcendence of different forms of human evils through intense superjection of creativity by finite personalities.

CHAPTER VIII

PHILOSOPHY OF HISTORY

History is the comprehensive study of the incessant flux of human societies down the ages. It is not merely a record of personal achievements or failures, victories or defeats of kings, dictators, political leaders and the like. It is rather the study of the social structures in their diverse aspects, *viz.*, social, political, economic, religious, intellectual and so on. It studies particularly the important landmarks and conspicuous events of various societies. In history the study of the activities of individuals is not so important as the study of the various social situations which have social or human significance. There have been certain rulers in the past who could not effectively lead the people and who could not leave any permanent impression on the society in which they lived. The insignificant episodes of their lives were forgotten soon after the termination of their reign. But, on the contrary, those rulers who effectively led the people and left lasting impressions on the society were the real makers of history. The real object of history is the study of the society, but not specifically the lives and activities of individuals. The method that was followed in history till recently was wrong for so far the lives and deeds of kings, emperors, dictators and so on were studied, but very rarely the various patterns of thought and behaviour, that were prevalent in a society, were studied. We think that the study of events in the life of an individual constitutes the real object of biography, whereas the study of events which have social significance is the real object of history. It is necessary, therefore, to discuss the real meaning of history and philosophy of history.

According to Arthur Child, there are five main conceptions of history. According to the first conception, history may be regarded as a form of 'imitation'. A historian tries to imitate the past in an appreciative sense by reproducing the events of the past. According to the second conception, history is a matter of personal experience of a historian. A historian accepts histo-

rical evidence only as a guide. He emphasizes certain events in accordance with his personal experience. From this point of view, history is a sort of creation in the sense that a historian creates history out of the materials that are available to him. According to the third conception, history is nothing but a sort of resurrection. The task of a historian is to revive the past once again in exactly the same form. A historian adds nothing new to the facts that are revived. According to the fourth conception, history is a sort of reconstruction. The work of a historian is similar to that of an archeologist who can reconstruct a temple out of the broken and scattered scraps and fragments that he discovers. Likewise the task of a historian is to reconstruct the past out of the fragmentary materials that are available to him. It is the job of a historian to supply the missing links that are not available while constructing a historical picture. From this point of view, history involves a fusion of the past and the future. According to the fifth conception, history involves transformation. The conception of history as transformation falls half-way between imitation and creation.¹ This is a brief statement of Arthur Child's analysis of the five conceptions of history.

From our philosophical standpoint, history is the detailed description of the organizational aspect of human societies. The various social, political, economic, educational, cultural and religious institutions comprise the organizational aspect of different societies. They constitute the physical aspect of different societies. The task of a historian is to describe these various social institutions and their activities. However, history is gradually transcending the descriptive stage and is fast moving towards the stage of causal discipline. A historian analyses facts and explains them with reference to their causes. He does not merely state facts, but he tries to discover the causes of various events and interprets their meanings. There are certain signs in modern history which indicate that history is gradually getting amalgamated with axiology. A historian

1 Child, A. 'Five Conceptions of History', *Ethics*, Vol. LXVIII, 1, 1957, pp. 28-38.

explains facts in terms of their meanings. He gets cues from the study of the organizational aspect of societies and tries to interpret the meanings of the various social situations. He tries to interrelate the events of the past in such a way that the latter make a consistent picture. He tries to establish a link between the past and the present by discovering the causal connection between them. The task of a historian consists in the discovery of the causal laws in the diverse historical events and the interpretation of their meanings. In sum, history is the detailed description of the organizational aspect of human societies and the interpretation of particularly those events which have social importance.

Whereas history is mainly concerned with the detailed description of the organizational aspect of human societies, philosophy of history is mainly concerned with the interpretation of the meaning aspect of those societies which have human significance. The chief aim of philosophy of history is to give a synoptic view of the entire human race with special reference to the teleological orientations of its dynamic process. The aim of philosophy of history is to give interpretation of the evolution the entire human race down the ages in terms of its fundamental meanings and teleologies. Its main purpose is to give a comprehensive perspective of the entire human race through different ages. It gives analysis and explanation of those events which have human significance. Its purpose is to study the teleological and the value aspects of the entire human race in its incessant flux.

The expression 'philosophy of history' is disliked by certain writers. Benedetto Croce observed that there was no philosophy of history, but rather philosophy was intrinsic to history.² Croce's comment on philosophy of history seems to be unsound. He wrongly identified reality with history, and history with philosophy. History, in its accepted sense, refers to human affairs. It cannot, therefore, be regarded as identical with reality. Croce limited the range of reality by identifying it with history. Moreover, history is not identical with philosophy, but rather it

² *The Theory and History of Historiography*, London, George Harrap & Co., 1921, p. 83.

is one of the ways by which human affairs may be comprehended. Philosophy, on the other hand, is the way by which reality is comprehended. Philosophy, therefore, has a wider range than history. The aim of philosophy of history, in our view, is to discover the link between humanity and reality through the discovery of the fundamental laws and teleological orientations of human affairs. Oman also despised the idea that there could be a philosophy of history.³ He believed that philosophers were the enemies of history for they tried to arrange historical events in a logical order.⁴ His view seems to be wrong for a philosopher of history does not necessarily reflect upon history with the idea that there was logical order in reality and in human affairs. A philosopher does not interpret history with any preconceived ideas, but rather he tries to have intuitive comprehension of reality first and then tries to corroborate his intuitive comprehension with the facts of experience. It is not the purpose of a philosopher to twist the facts of experience to prove his theory. The historical facts substantiate the philosophical theory of a philosopher. In our view, there are disharmony alongside harmony and discontinuity alongside continuity in the movement of history. This view is supported by facts of experience. Oman's view, therefore, seems to be wrong who believed that a philosophy of history necessarily presupposes some view of ordered reality.

From our philosophical standpoint, there is no sharp line of demarcation between history and philosophy of history. History studies in detail all possible events of each society having social significance. Philosophy of history, on the other hand, studies the fundamental laws of development, decay and stability of the entire human race. It is the purpose of philosophy of history to study the meaning, purpose and value of those events which have significance for the entire human race. The study of local history of each society paves the way for the study of the world-history, and the study of the world-history paves the way for the study of philosophy of history. The study of history

³ *The writings of History*, 1939, p. 9.

⁴ *Op. Cit.*, p. 84.

originates at the empirical level, and at a later stage moves towards the philosophical level through the channels of axiology. History, therefore, must ultimately merge in philosophy of history so that its meaning becomes intelligible in the light of reality itself.

Hegel worked out his philosophy of history in detail. According to him, the methods of history may be classified under three broad headings, viz., (i) original history, (ii) reflective history, and (iii) philosophical history. Original history is concerned with the eyewitness description of the deeds of the people of a particular society. It is, therefore, nothing but the narrative of events which a historian actually observes around him in the social environment. In reflective history a historian transcends the present and tries to get knowledge of the entire history of mankind. Finally, philosophy of history is nothing but the thoughtful consideration of events that take place of human society.⁵

According to Hegel, Reason is the substance of reality as well as human personalities. History of the world is nothing but a rational process. History itself is the mind which clothes itself with the form of events.⁶ The Spirit which is self-identical unfolds itself through the world. Divine Providence or religious truth directs the world. It presides over the events of the world. It is the wisdom which is conscious of its rational purpose in the world. The world is the embodiment of Reason.

According to Hegel, the Spirit has its centre in itself. The Spirit exists in itself. It has self-contained existence and does not depend upon anything else. Freedom is the sole truth of the Spirit.⁷ The Spirit is free because it is not dependent on anything else outside itself. It is self-contained. The self-contained existence of the Spirit is identical with self-conscious existence. The self-conscious Spirit is gradually working itself out through universal history. The Orientals did not have

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5 Hegel, G. W., *The Philosophy of History*, New York, The Colonial Press, 1900, p. 8.

6 Hegel, G. W., *Philosophy of Right*, Oxford, Clarendon Press, 1942, p. 217.

7 Hegel, G. W., *The Philosophy of History*, p. 18.

knowledge of the Spirit. They did not realize that man as such was free. They knew that a despotic ruler was free, and none else. But truly speaking a despotic ruler is not free for freedom of the one is tantamount to caprice and brutal recklessness. A despot, therefore, is not a free man. The consciousness of freedom arose first amongst the Greeks. However, the Greeks thought that only a few persons were free, and not everybody. They thought that slaves were not free. The Romans also had a similar conception of freedom of human personalities. The Greeks and the Romans did not realize that man as such was free. Even Plato and Aristotle did not recognize that man was fundamentally free by his nature. The Germans, under the influence of Christianity, were the first to recognize that all men were free. They recognized that man as such was free.⁸ The history of the world originated in the East and travelled towards the West and finally culminated in Europe. The object of history is to realize the idea of freedom. The people of the East believed that only *one* individual was free, the Greeks and the Romans believed that *some* were free, and the Germans recognized that *all* were free. The different gradations of consciousness of freedom found expression through various forms of political institutions, viz., Despotism of the Orientals, Democracy and Aristocracy of the Greeks and the Romans, and Monarchy of the Germans.⁹ The Oriental people represented the childhood of political thought. The German spirit, on the other hand, represented the height of political maturity.

“In Hegel’s view, history of the world is nothing but gradual realization of the idea of freedom. Freedom is the ultimate nature of Spirit itself, and it is the ultimate goal of history. History of the world is the actual working of the Divine plan. It is the aim of philosophy to comprehend the real purpose of the Divine Idea. The State, according to Hegel, is the Divine Idea that exists on earth.¹⁰ It is an ethical being. It is the objective realization of the moral idea. It is the objective unity

⁸ *Op. Cit.*, p. 18.

⁹ *Op. Cit.*, pp. 103-4.

¹⁰ *Op. Cit.*, p. 39.

of morality and rational freedom. It enhances freedom and ethical purpose of human personalities. It is the goal of historical development. It is the rational idea in the development of world history. There is an essential union between Idea on the objective side and personality on the subjective side. The State is the objective aspect of this union, and it is also the basis for other concrete elements of the life of a people, such as art, law, morality, religion, science and so on. The Spirit becomes conscious of this union of the objective and the subjective, i.e., of its own freedom. The highest form of conscious union of the objective idea is religion. The State is based on religion, and the general idea of the nature of God constitutes the general basis of a people's character. The nature and the constitution of a State is determined by the nature of religious consciousness of its people. Human personalities become conscious of their freedom through the awareness of the idea that they have their existence in the Divine Being.

According to Hegel, changes that take place in history are for the realization of something better and more perfect. However, whatever changes take place in Nature exhibit a self-repeating cycle. Nothing new happens in history. The Spirit is immortal. It has neither past nor future. It is in the eternal present and all these earlier steps are contained in it.¹¹ Change in history is from implicit to explicit. It is an organic growth. The development of historical process is analogous to the differentiation of a tree into branches, leaves, flowers, fruits and the like. The seed of a tree represents the synthetic unity which contains the whole tree. The later stages in the process of development annul and absorb the earlier ones. Family is a kind of miniature and immature state. A civil society is also a kind of state though it is greater in magnitude and less immature than a family. A civil society eventually develops into a State through the educative influence of the civil life. The universal State swallows up the national States just as a big river swallows up the smaller ones. Each particular nation State is a conscious individual in the process of the development of the world history.

¹¹ *Op. Cit.*, p. 79.

It is the Divine mission of each nation State to fulfil the purpose of universal history. World history is the march of the Spirit on earth. But this movement of the Spirit is not spatio-temporal. Becoming is a logical concept. In the dialectic process of the Absolute there is neither transition from one event to another in time nor from one point to another in space. In the process of development of the world history there is transition from lower to higher categories. The dialectic process is not in time, but it is an eternally realized Idea. Movement from lower categories to higher are not processes of construction, but rather they are reconstructions. Reality is timeless and eternal.

Hegel's theory of the philosophy of history is the application of his theory of reality to the study of human history. His philosophy of history is a popular exposition of his theory of reality. One of the most important contributions of Hegel to the study of history lies in the fact that he emphasized on the point that history should be studied from the universal point of view and that it should be philosophically interpreted. Philosophy of history is not a mere discussion of events in the world in their chronological order, but rather it is thoughtful reflection on the fundamental principles which guide human history. Realization of freedom is the goal towards which human history is oriented. The movement of world history is, therefore, meaningful. These are the elements of truth in Hegel's philosophy of history. But there are certain defects in Hegel's view which should be carefully analysed and studied. Hegel maintained that history began with self-conscious social activity. Since, according to Hegel, self-consciousness is the prerequisite of history, uncivilized people cannot be said to have any history. It seems that Hegel circumscribed the scope of history too much. When Hegel said that history began with the study of the self-conscious activities of a society, he obviously excluded the study of events of aboriginal and mediocre societies. We think that philosophy of history must study the nature of all possible types of societies that exist in the world; otherwise it may not be possible to get a comprehensive perspective of the nature of the entire human race. Further, it seems that Hegel's view was dogmatic when he asserted that world history was identical with the march of

God on earth. Hegel believed that world history was the work of God Himself and that all events took place in human society in accordance with the Divine plan. If history had worked itself out in accordance with the Divine plan, human personalities would have become clearly conscious of it. But human personalities are not clearly conscious of the Divine plan which is working itself out through history, which indicates that God is not actually directing the history of the world. If it is taken for granted that a Divine plan is working itself out through the world, then occasional setbacks, detours and decadence cannot be satisfactorily explained from the Hegelian point of view. The existence of evil and imperfection would be ruled out, if God were the director of world history. Hegel wrote his philosophy of history with certain dogmatic presuppositions. Furthermore, in Hegel's view finite personalities are mere puppets in the world-drama of God. Contrary to what Hegel believed human personalities seem to be the real architects of their own destinies as well as the real makers of world history. There are various trials and errors in world history because teleological orientations are given to various societies by human personalities, and not by God. These trials and errors in the acts of orientations that are given to social and political ends are due to the fact that the teleological aspects of human personalities are not sufficiently well-defined so that the directions that they give to history should be free from errors of judgment. If God directed world history, then errors of judgment on the part of social and political leaders would not occur and thus there would be no national decadence and disorder in world history. But the development of the world history is not as rational, orderly and noble as Hegel supposed. Finally, Hegel's analysis of history seems to be wrong when he asserted that the Orient represented the childhood of cultural development and that Germany represented the perfection of cultural development. The contrary of what Hegel believed seems to be true. There was high cultural development in India during the Vedic and the post-Vedic periods, while, on the other hand, Germany represented the hot-bed of brutality and barbarism not too many years after the death of Hegel. Hegel neither clearly understood the mind of the Oriental people nor the mind

of the German people. It is obvious, then, that Hegel's interpretation of History was wrong.

Marx was greatly influenced by Hegel's method of interpretation of history. However, he accepted one aspect of Hegel's thesis that there was change and development in human history and that all developments took place in a dialectic fashion. But he rejected the Hegelian thesis that the dialectic movement of human history was guided by Divine Providence. Marx and his collaborator Engels maintained that the movement of history was not spiritual, but that it was basically due to class struggle. According to them, class struggle is the fundamental law of historical movement, and new socio-economic systems emerge out of violent class conflicts. Social and political changes of a country are determined by the latter's economic production. The great moving power of all important historical events in a society is the economic factor which is manifested through the modes of production.¹² The material conditions of a society change with the changes in the modes of production, and the people of a society think in terms of changed socio-economic conditions. The struggle between the capitalist class and the working class is the most important factor in accelerating social, political and economic changes. Different forms of social, political and intellectual activities of individuals of a society are determined by the mode of economic production of that country. The working class is the greatest productive force of a country. Certain necessary and inevitable relations are established between individuals of a society in the course of their productive activities. As human history moves on the struggle between the capitalist class and the working class becomes more and more acute. The laws of historical movement are inevitable and deterministic in their nature. In a society individuals form certain necessary and inevitable relations independent of their wills in the course of their productive activities. The economic condition of a society is the most important factor in determining the nature of social relations. Unsatisfactory relation between the capitalist class and

12 Engels, F., *Socialism, Utopian and Scientific*, Chicago, C. H. Curr & Co., 1918, p. 23.

the working class leads to class conflicts. A society inevitably moves towards the goal of Communism by virtue of its inherent laws of development. The movement of human history is not directed by God or any other supernatural power. It is determined by the economic conditions of the different societies of the world. It is evident, then, that men make their own histories in accordance with the inevitable laws of material development. According to the materialistic conception of history, therefore, the economic condition of a society determines all other manifestations of a human society.

There are certain elements of truth in the materialistic interpretation of history given by Marx and Engels. It is an undeniable fact that different types of maladjustments and tensions between various groups of a society are to a very great extent due to the economic factors of a country. Unsatisfactory relation between the capitalist class and the working class in the productive machinery of a country is one of the most important determinants of class conflict. Inequitable distribution of wealth amongst the different classes of persons in a society is one of the causes of class conflicts and revolutions. But the view of Marx and Engels was erroneous when they asserted that the economic condition of a country was the sole determinant of all manifestations of human history. There are innumerable conditions which determine the movement of human history, such as biological conditions, economic conditions, ethical conditions, religious conditions, political conditions, intellectual conditions and so on. The economic interpretation of history is very narrow and one-sided. Moreover, the view of Marx and Engels was wrong when they maintained that the movement of human history was determined by the inevitable deterministic laws of the productive machineries of different countries. The movement of human history, according to the economic interpretation, takes place in accordance with *a priori* and deterministic laws. But in actuality the movement of human history does not take place in accordance with inevitable and *a priori* laws of development. There are innumerable instances in the different human societies which bear testimony to the fact that human history sometimes moves in indeterministic and unpredictable fashion.

There is no necessity and inevitability in the movement of human history. No historian can precisely predict the future courses of development of human history. There are innumerable known and unknown conditions which determine the movement of human history. It is, therefore, impossible in principle to predict the future courses of movement of human history exclusively from the economic interpretation of human activities. Benedetto Croce remarked that the Marxian interpretation of history was neither a new philosophy of history nor a new method of thought applied to history, but that it was merely a sort of clarion call to the working class to pay more attention to those economic conditions which inevitably led to class conflicts.¹³ Henri Sée remarked that the Marxian interpretation of history was fundamentally defective because it was not a disinterested scientific study of history, but that it was the application of a preconceived philosophy to history with the result that such an interpretation of history did not tally with historical events.¹⁴ Karl Federn also observed that the Marxian conception of history was based upon the presupposition that economic conditions were the fundamental causes of all human expressions in the course of the movement of history. He pointed out that the Marxian view was the falsification of history mainly because it was a purely deductive rather than an inductive method of approach and that it was not corroborated by historical facts.¹⁵ The Marxian interpretation of history is not a philosophical study of history, but rather it is the statement of a political creed in the garb of objective interpretation of history. It has greater propaganda value than academic value. G. M. Trevelyan rightly observed that history could not be used for propaganda even with the best of motives.¹⁶ S. T. Possony aptly pointed out that according to the Marxists class war was the essence of history and that the Communist millennium could be achieved

13 *Il Materialismo Storico ed Economica Marxista*, Bari, 1910, p. 70.
14 *The Economic Interpretation of History*, New York, Adelphi Co., 1929, p. 119.

15 *The Materialistic Conception of History*, London, Macmillan Co., 1939, p. 155.

16 *The Present Position of History*, London, Longmans Green & Co., 1927, p. 8.

through violent revolution and global war against the capitalists. He observed that civilization and freedom could not survive in an atmosphere of fear which was generated by the Marxist set up of society.¹⁷ L. Robbins rightly pointed out that international Communism aimed at more wealth and more freedom for everybody in the world, but the means that it suggested for realizing that goal ended in the frustration of both the ends.¹⁸ The Marxist interpretation of history ceased to be a philosophical reflection on history when the former renounced its objective approach in favour of employing its basic principles as political creeds.

Ostwald Spengler maintained that world history was the collective biography of the various cultures of the world. According to him, the various cultures of the world touch, blend, overshadow and suppress one another in the course of historical movement. Every culture has its own civilization which is its inevitable destiny. Civilizations are the products of artificial human relations. The task of a historian is to study the courses of development of the various cultures of the world and their relations with one another. The world history is essentially city history.¹⁹ A city is the centre where there is concentration of intellectuals. Important policies of a State are formulated in cities. History of the world is, therefore, the history of civic persons. Feudal nobilities, war lords and priests acquire the leadership of the world. The peasant class has no history. Villages are outside the scope of world history.²⁰ Man's mastery over Nature began with the invention of the various tools of cultivation and his efforts in the field of technology were crowned with great success when he invented various types of machines. Thus in the course of the movement of history engineers, businessmen and industrialists displaced peasants and artists.

According to Spengler, each culture is an organism.²¹ Each culture has its own peculiarities, but the mode of development

17 *A Century of Conflict*. Chicago, Henry Regnery Co., 1953, p. xxi.

18 *Economic Planning and International Order*, London, Macmillan & Co., 1937, p. 220.

19 Spengler, O., *The Decline of the West*, New York, Alfred A. Knoff, 1928, Vol. II, p. 95.

20 *Op. Cit.*, p. 96.

21 *Op. Cit.*, Vol. I, p. 104.

of each culture is fundamentally of the same nature. Once a culture comes into existence it inevitably follows a deterministic pattern of development and decay. Each culture has a beginning, a development, a full blossoming, a decay and a final collapse. The same phases of development and decay are distinguishable in all cultures. The natural processes of development and decay are analogous to all other phenomena of Nature. There are four stages of development of a culture, viz., its preliminary, early, late and civilized stages. The term 'culture' refers to the earlier stages of a society, and the term 'civilization' refers to the later stages of its development. Every culture possesses its style which is irreducible to the styles of other cultures. The people of a particular society share in common the same philosophy of life and the same ethos. The study of development and decay of each culture has a great historical importance, while, on the other hand, the study of the interrelation between different cultures is of lesser importance. Each culture culminates when it attains its stage of civilization. The creative activities of persons decline in the last stage of civilization leading to the decay of a society. There is commercialization of the various institutions of a civilized society, and there is decadence of the creative upsurge in every aspect of life. The Western civilization has reached the stage of final decline. However, the history of the world has perhaps no discoverable meaning in it. The origin of a culture is a mysterious act. It is determined by destiny. It is impossible to comprehend the nature of destiny by the epistemology of philosophy and sciences. Destiny is the ultimate moving power of history.

Spengler's interpretation of history is open to various objections. He believed that a particular culture was an organism which had natural processes of development and decay like all other organisms in Nature. A culture, according to him, has the distinguishable stages of childhood, youth, maturity and old age like a human organism. It has distinguishable phases of spring, summer, autumn and winter like the cycle of seasons. The distinguishable features of a society are only superficial, partial and accidental; they are not fundamental, complete and real. A culture is not an organism, but it is only a form of

social organization. Obviously, Spengler's view suffers from false analogy. Besides this, his definitions of the terms 'culture' and 'civilization' seem to be vague and unsatisfactory. He described the earlier phases of a society as 'culture' and its later stages as 'civilization'. From our philosophical standpoint, the term 'civilization' mainly refers to the material progress and technological advancement of a country, and the term 'culture' refers to the intellectual development and creative advancement of a society. The culture of a society is not prior to its civilization, but, on the contrary, civilization is prior to the culture of a society. Civilization paves the way for the realization of the ideal of culture in a society. Spengler's erroneous distinction between civilization and culture is due to his confusion regarding the exact implications of the two terms. His thesis that villages are devoid of history and that world history began with the appearance of cities in the world seems to be very superficial. A society may have history if there are conspicuous changes of ideas expressed through the different forms of institutions and the modes of behaviour of its members irrespective of whether such a society is predominantly rural or urban. Nobody can deny that India had history during the Vedic and post-Vedic periods in spite of the fact that cities did not crop up in the ancient Aryan society of those periods. On the contrary, if a society abounds in most modern cities where there are almost no conspicuous activities other than gambling, drinking bouts, philandering and the like year after year, there can be hardly any history in such a society, it can at the most have a chronicle. Therefore, Spengler's view, that history began with the appearance of cities in a society seems to be wrong. Further, his view that all cultures of the world move in definite cycle of birth, growth, development and decay seems to be wrong. His view is not substantiated by any concrete instance. He claimed that he could predict the future course of development or decay of a particular society by studying its antecedent stages. On this point also his claim proved to be false. He believed that the Western civilization was about to reach its final doom. Here his prediction proved to be false for the Western civilization seems to exhibit innumerable signs of development rather than of decay

and disintegration. Moreover, the different societies of the world do not move in the same cyclic order. There is no fixed pattern of movement for every type of society in the world. There may be infinite variety of ways by which the movement of the various societies of the world may take place. The movement of history is not necessarily determined by any deterministic law. On the contrary, there are instances which bear testimony to the fact that history sometimes moves in an indeterministic and unpredictable fashion. We, therefore, think that Spengler's claim that he could foretell the future state of a culture was utterly baseless. Finally, it appears that Spengler did not have a clear idea of the nature and meaning of history. He believed that the State was history in its position of stability, and that history was the State in its process of movement.²² Spengler's definition of history is vague and confused. There are certain States in the world in which the government is taken over sometimes by one political party and sometimes by another as a matter of hackneyed change of hands in quick succession without producing any distinguishable changes in that nation for a long time. Such a State has hardly any history; it has only chronicle of events. On the other hand, there are States which have stable and progressive governments and yet help their members to realize their creative ideals by granting them positive freedom. Obviously, Spengler did not clearly understand the real meaning of history. His view that man made history, while woman was herself history since she was plant-like, primary and the eternal source of the sequence of generations appears to be absurd.²³ Spengler acknowledged intellectual defeat when he confessed that a scientific analysis of historical events could not enable us to discover the nature of causality which played its part in history because the latter was directed by the mysterious power of destiny. His view of history was devoid of scholarly judgment. His aim was to appeal to the forces of reaction, and his view did appeal to the reactionary forces of his age and the age following him. His view anticipated the emergence of totalitarian

22 *Op. Cit.*, Vol. II, p. 361.

23 *Op. Cit.*, p. 328.

and fascistic forces in Europe which appeared two decades after his death. Hertz commented that Spengler preached the doctrine of national and militaristic dictatorship on the basis of his naturalistic and romantic philosophy.²⁴ Lewis Mumford rightly remarked that Spengler interpreted the world history in terms of the limitations of his own country and his own generation.²⁵ He pointed out that in Spengler's view politically aggressive persons of a society were supreme and that the artists and religious persons had an inferior place in it. Spengler despised all forms of creativity which were not associated with machine. His view of history is, therefore, extremely biased and one-sided.

Benedetto Croce gave a novel and unique interpretation of history. According to him, the distinction between history and chronicle is nothing but the result of two different spiritual attitudes. History is the living chronicle in the sense that it is the contemporary history, while, on the other hand, chronicle is the history of the dead past.²⁶ History which ceases to be a spiritual act and is divorced from the living document is turned into chronicle.²⁷ History is identical with the actual movement of life and thought. It is an act of understanding and comprehending reality prompted by the actual requirements of life.²⁸ It is the record of the creations of the human spirit in every field of life.²⁹ Documents and criticisms constitute the elements of historical synthesis. Criticism in history is necessary to examine whether life is lived seriously enough or not and to see how far historical judgment has been used prudently and how far it has been shirked.³⁰ It is on account of this critical judgment in history

24 Hertz, F., *Nationality in History and Politics*, London, Kegan Paul, 1944, p. 362.

25 *The Condition of Man*, London, Martin Secker & Warburg, 1944, p. 374.

26 *The Theory and History of Historiography*, p. 19.

27 *Op. Cit.*, pp. 20-21.

28 Croce, B., *History as the Story of Liberty*, London, George Allen & Unwin, 1949, p. 17.

29 Croce, B., *My Philosophy and other Essays on the Moral and Political Problems of Our Time*, London, George Allen & Unwin, 1949, p. 168.

30 Croce, B., *History as the Story of Liberty*, p. 22.

that there is logical unity in real historical works. The essence of history does not consist in the temporal succession, but in the spiritual movement. The task of historiography does not consist merely in retracing the temporal events of the past, but in the clear comprehension of the moral ideal which is working itself out through human life. History has to be explained with reference to the spiritual force which constitutes the very essence of human personality. It cannot, therefore, be adequately explained merely with reference to the natural causes.³¹ The concept of cause should remain outside history for it has significance only in the realm of natural sciences. History should be explained only with reference to the spiritual force that is working itself out through human personalities. It is the record of spiritual movement. The movement of history is essentially qualitative in its nature. The ethical purpose of human personalities consists in their effort to realize the qualitative wholeness in every moment of their existence. Moral life of human personalities consists in their persistent effort to realize the qualitative universality. History resides in the immanence of the totality of human spirit expressing itself through every form of living and thoughtful activity. Liberty is the essence of the human spirit. The movement of history may be regarded as an effort on the part of human personalities to realize the ideal of liberty. Liberty is a moral ideal. History may be regarded as the history of liberty. A clear understanding of the nature of spiritual liberty shows that history is not divorced from philosophy or that philosophy is not divorced from history. In fact, history is identical with philosophy. Historical knowledge is complete knowledge. It is not a variety of knowledge, but rather it encompasses the whole field of knowledge.³² Since history encompasses the whole field of knowledge it indicates that there is fundamental unity between history and philosophy. The different ideas of mankind are the expressions of the perpetual flux of history. History is identical with reality. It is the record of the spiritual activities in the world. In sum, reality, history and philosophy are identical.

31 *Op. Cit.*, p. 28.

32 *Op. Cit.*, p. 32.

Croce's theory of history is the expression of his speculative thinking. His view of history is not substantiated by any empirical evidence. His use of the term 'Spirit' seems to be rather vague for he did not define it in precise language. Sometimes he identified Spirit with the ethical nature of human personalities and sometimes with human liberty. But ethical purpose and liberty do not have exactly identical meanings even though ethical purpose involves liberty. Liberty is involved in all forms of creative teleologies including the ethical purpose. Moreover, human history cannot be regarded exclusively as an ethical drama. Apart from the ethical values there are other forms of values in life, viz., æsthetic, religious and intellectual values. Croce emphasized only the ethical value in the movement of human history. His view of history, therefore, seems to be narrow and one-sided. Besides this, there seems to be some confusion in Croce's distinction between history and chronicle. Croce observed that history referred to contemporary events which were actually lived, but it was transformed into chronicle when it ceased to be living and expressive. We think that history primarily refers to the past. Present events are generally excluded from history. Recent events may be placed under the category of news, but not under the category of history. Croce maintained that history referred to contemporary events which were ethically lived. This is definitely not the accepted definition of history. In our view, history refers to the creative advance as well as decadence of a particular society; it does not merely refer to the contemporary ethical activities of human personalities. Further, Croce was not justified in identifying history with philosophy. Philosophy is the clear comprehension of the structure and meaning of the dynamic reality. History, on the other hand, is the record of the events of the past of human societies. The living history of the masses of individuals of human societies may not as clearly express the meaning of reality as the latter may be expressed through the intuitive apprehension of a few gifted philosophers. The meaning of reality that is expressed through the living history of the entire human race is more shallow, superficial and partial than the philosophical comprehension of the nature of reality by a few

gifted philosophers. History cannot be regarded as identical with philosophy since the former falls short of the latter in its range and depth of comprehension. Historical judgment does not encompass the entire field of knowledge as Croce wrongly maintained. Historical judgment aids philosophical comprehension of reality, but it is only one of the varieties of knowledge and does not encompass the whole field of perennially growing knowledge. Finally, Croce wrongly identified human history with reality itself. Human history is a very small part of reality through which only an aspect of its meaning is expressed. Croce committed the mistake of spiritualizing the entire human history. A. L. Rowse truly remarked that Croce's view ended in a sort of historical mysticism.³³

R. G. Collingwood's view of history has a close affinity with that of Croce. According to Collingwood, history refers to the history of thought.³⁴ The task of a historian is mainly to study thoughts of persons who lived in the past. His task is not to apprehend the past events empirically, but rather his business is to study the events of the past by a process of inference according to rational principles. He looks for the thought processes of human personalities who lived in the past. He has knowledge of the past by re-acting in his mind the thoughtful actions of persons of the past. The thought processes of human personalities can be adequately explored by adopting the methods of history. The life of a human individual is fundamentally historical in its nature because his life is on the mental and the spiritual plane.³⁵ A historian is mainly concerned with the study of the actual working of thoughts in the finite personalities, and not with their deeds. The appetites and impulses of human personalities are non-historical in their nature. A historian is not interested in the natural activities of finite personalities, such as hunger, thirst, love etc., but with the thought processes which are expressed through social customs, moral conventions and so on. It is true that there may be history of warfare, history of economics, history of ethics and so on. But history

33 *The Uses of History*, London, Hodder & Stoughton Ltd., 1947, p. 149.

34 *The Idea of History*, Oxford, Clarendon Press, 1946, p. 215.

35 *Op. Cit.*, p. 93.

of thought is the ultimate source from which different forms of historical thinking emerge. The task of a historian is to rethink the thoughts of the past and identify himself with the past. A historian visualizes the past with his self-determining historical imagination. He studies history primarily for self-knowledge.

According to Collingwood, all metaphysical questions are historical in their nature because the propositions of metaphysics are also the propositions of history.³⁶ Metaphysics always discusses a certain class of historical facts, viz., absolute propositions. It is, therefore, a historical science.³⁷ Scientific theories are also historical in their nature. They ultimately rest upon certain facts. One must, for instance, have a clear comprehension of the entire background of thought which ultimately resulted in the formulation of Newton's law of gravitation. Scientific theories have to be studied in the light of their historical background.³⁸ Clear understanding of scientific theories presupposes a clear understanding of history. There is, therefore, a close link between the idea of Nature and the idea of history.

In Collingwood's view, a mature historian does not believe in all facts that are empirically presented to him. Mature historical judgment depends upon what a historian makes of historical facts.³⁹ A historian ascertains the nature of facts critically; he does not accept them credulously simply on the basis of some authority. If he is misled by some authority, the responsibility for the misrepresentation of facts is entirely his own. He must have, therefore, a clear knowledge of the entire world of facts. History includes the infinite whole of thoughts because it is essentially universal history. It encompasses the entire field of knowledge.

It is true that Collingwood got a very important clue to the right comprehension of history, but he could not profitably utilize it for the right interpretation of it. It cannot be denied that a historian takes into account the thoughts of human per-

36 *An Essay on Metaphysics*, Oxford, Clarendon Press, 1948, p. 49.

37 *Op. Cit.*, p. 58.

38 *The Idea of Nature*, Oxford, Clarendon Press, 1945, 177.

39 Collingwood, R. G., *Speculum Mentis*, Oxford, Clarendon Press, 1946, p. 217.

sonalities of the past and reviews them judiciously in order to get a clear comprehension of history. But a historian does not necessarily re-enact the thoughts of persons of the past in order to identify himself with the past and thereby attain knowledge of himself. The reverse of what Collingwood suggested seems to be true. A historian must have a clear knowledge of his own personality before he tries to clearly understand the meaning of human history. In other words, clear knowledge of human nature through the study of one's personality is necessary prior to one's attempt to study the meaning of human history. A historian cannot adequately interpret human history unless he is in the possession of some of the sound and valuable epistemological methods. The historical methods are only aids to comprehensive epistemological methods, but the former cannot be regarded solely as the epistemological methods. Further, Collingwood seems to limit the scope of history by regarding it exclusively as a history of thought. A genuine historian does not merely study the thoughts of persons of the past, but also their feelings, emotions, sentiments, hopes, aspirations, habits, customs, conscious volitions, unconscious tendencies, creative efforts and so on. All the different forms of human expressions cannot be explained exclusively with reference to 'thought'. The term 'thought' has a specific meaning. Thought is the expression of the rationality of human personalities, but it does not comprise the whole of human personality. Human personalities create many forms of values other than intellectual values. Creative purpose is the ultimate source of the different forms of human expressions including thought. Ethical, religious, æsthetic and intellectual values are the expressions of the creativity of finite personalities. It is evident, therefore, that Collingwood could not clearly understand the nature of the fundamental principle which operates in human history. Moreover, Collingwood seems to be interested in taking into account the development of thought in human society, and not with its decadence. But history takes into account both development and decadence of thought and all other forms of human expressions operating through human history. Moreover, Collingwood's view that metaphysics and sciences are historical in their nature seems to be unsound. It is true that

both metaphysical and scientific theories should be studied in the light of their historical background. But that does not imply that the propositions of metaphysical and scientific theories are also necessarily historical propositions. Some of the propositions of metaphysical and scientific theories are expressive of the speculative jump into the realm of the unobserved and the unknown which by their very nature transcend historical facts. Collingwood exaggerated the rôle of thought in human history. His view of history, therefore, seems to be narrow.

A. J. Toynbee made a thorough and comprehensive study of history. According to him, the intelligible unit of historical study is neither a nation State nor mankind as a whole, but certain distinguishable groups of human individuals called 'societies'. Some of these societies are primitive and others are civilized. Primitive societies outnumber civilized societies, and are comparatively short-lived.⁴⁰ Mimesis or imitation is the generic feature of all types of societies. In primitive societies mimesis is directed backward towards the customary rules of the past, while in societies which are in the process of acquiring civilization mimesis is directed towards a few creative personalities who command a following. A new civilization emerges when there is transition from the static condition to the dynamic condition of a society. A society acquires the stage of civilization through self-determination and self-articulation which are expressed through the activities of human personalities. Progress towards self-determination is the criterion of growth of a society. There is growth of a civilization through an *élan* which carries it from differentiation through integration to further differentiation.⁴¹ The growth of civilizations owes its origin to creative personalities who constitute a minority. The dynamic activities of the creative few sustain the development of a civilization. When the creative leaders fail to lead the uncreative masses, the existence of the former becomes an abuse, and they create certain conditions in a society which may lead to revolt amongst the masses. The internal discord of a society is the predisposing

40 Toynbee, A. J., *A Study of History*, London, Oxford University Press, 1939, Vol. I, p. 149.

41 *Op. Cit.*, 1948, Vol. III, p. 128.

cause of its disintegration. The breakdown of a civilization is not due to the termination of the life-span of a society or due to the loss of command of a society over its environment or due to lack of industrial techniques or due to attack of a society by a hostile nation, but rather it is due to its loss of self-determination. Thus, the breakdown of a civilization is heralded by the outbreak of internal discords through which a society loses power of self-determination.⁴² The discords of a society can be overcome by taking recourse to religion through which the real meaning of history can be understood. It is generally found that a universal church originates in a society during a time of troubles following the breakdown of a civilization.⁴³ The distinguishing mark of a church is belief in One True God. It is through the belief in One True God that individuals of a society are able to overcome their internal discords. There can be no unity of mankind without belief in God. A society inevitably falls into a time of troubles when its members lose faith in the guidance of the divine pilot.⁴⁴ History is the progressive working of a divine plan which is only partially revealed to human personalities through their limited range of understanding.⁴⁵ God alone has complete comprehension of history, but human understanding of the meaning of history is only partial and fragmentary. Man catches through his study of history only faint glimpses of the operation of One True God through the lives of human personalities who respond to His call and who act as willing partners in executing His divine plan.⁴⁶ The God of Love has given to human individuals their freedom so that they may use this divine gift for the judicious selection of the life of goodness instead of evil.⁴⁷ Man's freedom, which is the expression of the Law of Love, gives him the liberty to choose the life of a sinner or the life of a saint. God never wishes that men should follow His ideal against their

42 *Op. Cit.*, 1948, Vol. V, p. 17.

43 *Op. Cit.*, 1948, Vol. VII, p. 391.

44 *Op. Cit.*, pp. 511-12.

45 Toynbee, A. J., *Civilization on Trial*, New York, Oxford University Press, 1948, pp. 14-15.

46 Toynbee, A. J., *A Study of History*, 1948, Vol. VII, pp. 512-13.

47 *Op. Cit.*, 1954, Vol. IX, p. 395.

will. Men may disobey the Law of Love if they so wish, but punishment is inherent in the act of disobedience itself. However, self-inflicted disaster that human personalities may have to face is not their final doom for sufferings of mundane life make them repent for their sins and seek the grace of God.⁴⁸ History, therefore, is not meaningless, but it is the revelation of God through the actions of human individuals who sincerely strive to orient their lives towards the realization of the divine plan. The task of a historian is only to get a fragmentary glimpse of God's purpose which is revealed through human actions from his unique point of view.⁴⁹ A historian finds through his study of human societies that history is not a cyclic or a mechanical process, but rather it is the progressive execution of the divine plan in the world. He finds that human civilization is a continuous movement which has not yet reached its goal. Growth of civilization is marked by spiritual progress. Religious progress takes place through the spiritual lives of human personalities.⁵⁰ The goal of human society is to raise itself from the human plane to the divine through willing participation in God's plan. A genuine historian, therefore, does not merely passively record the human events of a society, but he tries to discover the inner implications of history. A genuine historian is a spiritually inspired philosopher who tries to discover the operation of God's plan working through human society.

The main contribution of Toynbee to the study of history consists in the fact that he discovered meaning in the movement of history, and that he tried to substantiate his thesis by innumerable historical evidences. But his interpretation of history does not seem to be entirely original. He reiterated the same theme that was stated by Hegel and some of the post-Hegelians in its broad outline. However, there is an important point of difference between Hegel's interpretation of history and Toynbee's interpretation of it. Hegel's interpretation of history was basically from the philosophical point of view, whereas Toynbee's interpretation of it was mainly from the theological

48 *Op. Cit.*, pp. 404-5.

49 *Op. Cit.*, 1954, Vol. X, pp. 1-2.

50 Toynbee, A. J., *Civilization on Trial*, p. 245.

point of view. Hence, the rational justification which is found in Hegel's interpretation of history is conspicuous by its absence in Toynbee's interpretation of it. Toynbee's interpretation of history has some of the inconsistencies which are generally found in the views of sentimental theologians. He gave expression to the exuberance of his Christian sentiment in the form of inspired and eloquent writings, but he rarely gave any logical or philosophical arguments in support of his theological interpretation of history. That is the reason why there is lack of consistency in his interpretation of history. In his view, the movement of human history is governed by the basic principles of Christianity. But all those principles do not seem to be consistent with one another. Toynbee observed that human freedom and human activities were expressions of the Law of Love, and that human individuals had the option of choosing either the life of goodness or the life of evil, and that even a sinful life ultimately produced good results through the atonement or one's sins. In other words, individuals of the entire human race try to fulfil the plan of God either by following a good life or indirectly by receiving God's grace through the atonement for their sins. Here there seems to be a fallacy in Toynbee's mode of thinking. He dogmatically assumed that immoral persons repented for their sinful deeds. It was a wrong analysis of human nature on Toynbee's part when he dogmatically assumed that persons who committed immoral actions necessarily repented for their sins and received God's grace. We believe that there is the Law of Justice in our universe, but it is doubtful whether the Law of Love operates in it. It is an undeniable fact that the actions of moral persons are rewarded that and in the long run the actions of immoral persons are sooner or later punished in accordance with the universal Law of Justice. However, it is doubtful whether all immoral persons repent for their sins. It is, therefore, doubtful whether human history presents as beautiful a picture as Toynbee conceived. There are ample instances in human history which show that there are persons who do not repent for their evil deeds till the end of their lives and that they offer tremendous resistance to the creative advance of human history.

We gave a brief exposition of the views of a few philosophers and historians who gave philosophical interpretations of history. We shall now give a brief interpretation of history from our philosophical standpoint. Human history, in our view, is the meaningful evolution of human societies towards the realization of creativity. We believe that human history has meaning and purpose because reality itself is meaningful and teleological from which the former derived its existence. It is, therefore, necessary to study human history in the light of its cosmic background.

The Absolute is the eternal creator of cosmic values. All cosmic values are not eternally realized in the mind of the Absolute. But rather the Absolute creates cosmic values one after another in sequence of time. The creative teleology which the earlier cosmic values shared in from the Absolute became dim and hazy due to the lapse of time and due to the fact that the creative comprehension of the latter was withdrawn from the former. The earlier cosmic values have, therefore, the basic features of creativity and nescience. In other words, there is implicit creative teleology in each cosmic value to which cosmic nescience offers resistance. Our world is one such cosmic value which has both the features of creativity and nescience. Consequently, human societies which evolved out of our world inherited creative teleology as well as nescience from the latter. The movement of human history is not meaningless, but rather it is definitely meaningful and teleological. The creative teleology which lies implicitly in human societies persistently tries to manifest itself and work itself out through human history, but cosmic nescience offers tremendous resistance to all forms of creativity. Nescience pervaded the entire human race both in the form of individual nescience and social nescience particularly in the earlier stages of human history. Nescience offers the greatest obstacle to the creative advance of human history. Creativity was the most rare phenomenon in the earlier stages of human history when nescience was so rampant in human societies. Nevertheless, creativity tries to pierce its way through the stupendous barriers produced by social nescience and individual nescience. In the earlier stages of human history

expressions of creative teleology were mostly on the individual level, and rarely on the social level. Rare and isolated cases of creative expressions by few creative persons were like faint and feeble rays of light which penetrated through the dense darkness of nescience. Then with the passage of time there was evolution of human societies resulting in the emergence of various types of societies. Thus, in course of time mediocre societies evolved out of aboriginal societies and civilized societies evolved out of mediocre societies. There are growing signs in modern civilized societies which give strong indications that cultured societies will most probably evolve out of some of the highly civilized contemporary societies. The transition of human societies from the aboriginal to the mediocre, from the mediocre to the civilized and from the civilized to the cultured societies is determined by the persistent creative upsurge in the entire human race. However, there are many variables other than the creative teleology, which determine the course of movement of human history, viz., the biological, the social, the emotional, and the intellectual needs. It is necessary that biological, social, emotional and intellectual needs of human personalities must be satisfied first prior to the realization of their creative ends. In the earlier stages of human history most of the human individuals and human societies were engaged in their struggle for the satisfaction of biological needs. At later stages of human history when biological needs of human individuals and human societies were partially satisfied, they were mostly engaged in the realization of social, emotional and intellectual ends. At still later stages of human history larger and larger number of creative persons were engaged in the realization of creative ends. The creative teleologies of creative persons gradually converged due to the creative advance of history. The convergence of creativity in creative persons is oriented towards the realization of the ideal of a cultured society. There is increase both in quality and diversity of creativity in the course of the movement of human history. In the later stages of human history it is found that creativity is not only on the individual level, but also on the social level through the creation of creative atmosphere. There are different degrees of creativity both on the individual and social

levels ranging from the lowest form of creativity to the highest form of creativity. Creativity of lower forms has only local and temporary value, whereas creativity of higher forms has universal appeal and lasting value. The conflux of creativity in a society pierces its way, as it were, through the colossal mediocrity of such a society. Thus, as the light of human knowledge and creative teleology dispels the darkness of nescience, human history attains the stage of intellectual dawn with immense possibilities for novel orientations in its creative adventure. To put the same idea in philosophical terminology, it may be said that in earlier stages of human history the conflux of physical aspects of psychophysical entities of human organizations make the Being aspect of human history so stable, that the Becoming aspect of human history acquires semblance of immobility. Becoming is anchored, as it were, to Being and makes the creative advance of the former ineffectual. The stable aspect of human history becomes so static that its dynamic aspect is baffled in its attempts to effectively drag the former in the process of its creative advance. But at later stages of human history there is greater conflux of psychical aspects of psycho-physical entities of human organizations whereby the Becoming aspect of human history carries along its Being aspect with ease and facility. The Being aspect of human history trails along its Becoming aspect as the superjection of creativity of creative persons advances perennially in its creative adventure.

The fact that human history is progressive movement towards the realization of the ideal of creativity becomes quite obvious when the nature and course of movement of human history during the last five or six thousand years is studied carefully. However, there are occasional swings in certain regions of human history between mediocrity and creativity. Sometimes the movement of human history takes place by unpredictable jumps. Sometimes the movement of human history takes place by trial and error. Sometimes it appears that certain regions of human societies have clear consciousness of the ideal of creativity and that the movement of human history is oriented towards that goal. It is quite obvious then, that there are different patterns of movement in human history through the passage of time. Moreover, it is

found through the study of human history that a society can be said to have history if there are appreciable progressive movements in it for the realization of ethical, religious, æsthetic and intellectual ideals or retrogression from those or similar ideals. Aborigines of an isolated island cannot be said to have any history because there are hardly any norms in it worth the name. Such an aboriginal society cannot be said to have any history though it has a chronicle. It is quite obvious, then, that human history is inseparably linked either with the approximation to the norms of creativity or retrogression from them. The study of human history during the last five or six thousand years reveals that it is a progressive movement towards creativity though in certain human societies and in certain periods of time history lapses into uneventful chronicle. Human history does not move in a cyclic order or in a mechanical manner, but it is progressive movement towards creativity in spite of occasional ups and downs. The element of determinism is there in human history in the sense that the progress in the latter is always oriented towards creativity. However, there is no fixed pattern of movement in human history for the progressive realization of the ideal of creativity. There may be innumerable types of orientations in human history for the realization of the ideal of creativity. Creativity as by its very nature many-faced; its expressions may be of innumerable forms. It is evident, then, that there is no fixed pattern of movement in human history. Human history moves in an indeterministic fashion with the ultimate goal of progressively realizing the ideal of creativity. Moreover, once the goal of creativity is fully realized by human history, its mode of operation will be indeterministic by its very nature because creativity always expresses itself in an indeterministic fashion. Nevertheless, even in the present stage of immaturity of human history it cannot be precisely predicted in which direction human history will orient itself for the progressive realization of the ideal of creativity and for the expression of its creative teleology. In sum, both the tendencies of determinism and indeterminism are there in the movement of human history.

There are two major currents in human history which are

clearly observed. One of the conspicuous movements in human history is to orient the different types of human societies towards the ideal of well-defined creativity, and the other conspicuous movement in human history is to restrict, obstruct and thwart the creative tendencies in human societies by rallying the uncreative forces against the creative few. Human history down the ages is marked by this subtle and implicit conflict between the creative and the uncreative persons. The uncreative persons far surpass the creative few mainly because persons with individual nescience predominate in human societies. Most of the persons in human societies remain engaged in solving their personal problems of existence and survival, and they have hardly any knowledge of the nature and purpose of their existence. Consequently, they give top priority to biological values and remain impervious to creative values. Persons with similar views on biological and pragmatic values generally rally together under a leader or a group of leaders. In due course of time several groups come into existence in a society and they try to oppose and sometimes even annihilate one another directly or indirectly. The presence of hostile groups of persons within a particular country is one of the main causes of the latter's internal weakness. Likewise it is found in human history that rival groups of persons in a country ignore their differences of opinion and agree on certain points of common national interest and rally under the ruling power of a country. Thus, one country opposes another country with a different socio-political ideology and sometimes it behaves like an enemy towards the latter. Sometimes different countries with racial or ideological affinities form alliances amongst themselves in order to oppose and wage war against other countries with different racial and ideological affinities. Thus, different countries of the world are divided into warring camps which put obstacles on the way of international peace and human progress. Thus, uncreative persons individually or collectively put obstacles in different ways on the way of the various creative tendencies of creative personalities on creative societies.

The congregation of uncreative persons into various groups takes place first through 'herd' consciousness. Uncreative persons

are generally conscious of the fact that apart from their association with various institutions they are helpless and weak. They derive their social solidarity and political strength through the various social and political institutions of which they are members. Creative persons, on the other hand, do not necessarily depend upon the membership of the various social and political institutions in order to retain the uniqueness of their creative teleology. They generally rely upon the strength of their own creativity, any may even remain aloof from various social and political institutions for the sake of sticking to their creative teleologies. They give top priority to creative freedom in life, and consider social and political liberties to be subservient to creative freedom. It is true that social and political liberties can have no real value unless they guarantee creative freedom. Social and political liberties have only instrumental function for the ultimate realization of creative freedom. But in most of the human societies social and political liberties are considered to be ends in themselves and creative freedom is lost sight of in the process of realizing the instrumental liberties first. Individuals of a society bring into existence various forms of social and political institutions through common consent with the purpose of safeguarding various social and political rights, privileges, liberties and the like. It is true that social and political institutions partially safeguard the interests of their members at least in the initial stages of their existence, but in later stages the domineering leaders of social and political institutions tried to impose their views on all the members of the various social and political institutions. Thus, the main aims of the various institutions were defeated for the realization of which they were brought into existence by the common consent of certain groups of persons. Some of the partially creative persons who were the members of the various social and political institutions found themselves in great discomfiture due to the coercive measures that the leaders of the various institutions adopted. They could not easily leave the institutions which they themselves created and they found it difficult to continue as willing supporters of the policies in accordance with which the hierarchy of leaders steered the activities of those institutions. Thus, subtle internal struggle

took place within the personalities of the members of various social and political institutions. The partially creative personalities wished to continue their membership in the various institutions in their own interests and yet they found it most annoying to continue their association with the latter. As a result of this internal struggle some of the partially creative persons dissociated themselves from some of the pernicious institutions and set up their own norms of various types. Some of their norms attracted the attention of certain sections of the uncreative masses of persons and the former became the nuclei of certain novel institutions. In this way rival institutions came into existence in societies, and they continued to exist until the institutions with culturally inferior and weaker norms were outmoded and eclipsed by institutions with culturally consistent and comprehensive norms. From this point of view human history may be regarded as a process of transcendence of the various social and political institutions with less consistent and comprehensive cultural norms by various institutions with more consistent and comprehensive cultural norms. Human societies undergo changes due to the replacement of one type of ideologies by other type of ideologies of social and political institutions. There is progress in societies through criticisms of the various social and political institutions. Sometimes when there is direct clash between institutions due to differences of their ideologies there is conflict in a society. However, in the long run institutions with superior ideologies replace those with inferior ideologies.

Individuals and institutions are the constituents of human history. Individuals of a particular society may be classified into two main groups, viz., the leaders of the various social and political institutions and the mediocre members of those institutions who are led. It is rarely possible for individuals of a society to dissociate themselves from the various social and political institutions. As a general rule it is the purpose of an individual either to lead the masses through various institutions or to be led along with the masses. An individual has to face threats of punishment in some way or other if he decides to think freely. Masses of mediocres generally spare such an individual, if he merely thinks silently, i.e., if he does not express

his thought; but they generally do not save him from being criticised or punished, if he expresses his views freely and publicly. Mediocre persons of the various institutions behave in accordance with the norms of their institutions. They have 'herd' consciousness in the sense that they become conscious of their own kind due to the similarity of their views and beliefs. Each 'herd' has uniform system of beliefs and opinions and uniform mode of behaviour. Most of the mediocre members of a 'herd' behave in accordance with the norms set up by the hierarchy of leaders of various institutions. They generally idolize their leaders. They also idolize the institutions of which they are willing members. This idolization of leaders and institutions has been going on almost since the beginning of human history. Mediocre members of the various institutions consider the views of their leaders to be supreme, final and infallible. The leaders of the various institutions also consider themselves to be indispensable architects of their institutions. They believe that they have the monopoly of 'wisdom' and that institutions cannot operate without their pilotship. Most of the major decisions of such institutions are taken by those 'wise' few. The leaders of various institutions decide the future patterns of behaviour for the mediocre persons by setting up norms of various institutions. In reality, however, most of those 'wise' leaders of various institutions are merely 'superior mediocres' and not creative personalities for genuinely creative persons neither play the rôle of leaders nor that of the led. The moment a genuinely creative person plays the rôle of a leader, he degrades himself to the position of a 'superior mediocre'. Feudal lords, priests, intellectual dictators, kings, emperors, dictators, war lords and so on are mostly 'superior mediocres'. Creative persons who are in the helm of affairs in the various institutions generally play the rôle of 'synthesizers'. Their rôle is to appreciate the values of all the members of institutions and posit their own values so that the latter may be appreciated by all members. Their rôle is that of an enlightened 'organizer'. An institution which is composed mostly by creative persons may be called a 'creative institution'. Creative institutions are based upon the laws of creation and appreciation of

values by all their members. The function of a 'synthesizer' of a creative institution is merely to synthesize and harmonize the values created by all members of such an institution for mutual appreciation. Moreover, the function of a creative institution is not to impose its specific norms upon its members through coercive methods, but its main purpose is to create a common platform or a common floor for the presentation and appreciation of values by all its members. The 'synthesizers' of creative institutions try to bring about a harmonious synthesis of norms through the harmonious concord of norms of all members of such institutions. However, there are very few creative institutions in our world at the present time. There are a few creative institutions on the level of family units, religious institutions, academies of sciences, humanities, fine arts, philosophy and the like. But so far creative institutions were rarely found on the level of a State or a federation of States. Hitherto almost all States all over the world are based upon the principle of domination of most of their citizens by a hierarchy of political leaders. There has been hardly any creative person in any State of the world at any period of human history who could be said to have played the rôle of a 'synthesizer' of values created by the citizens of a State. Creative persons oriented their creative activities mostly towards the realization of ethical, religious, intellectual and æsthetic ends. But they generally recoiled from actively participating in the affairs of a State or other political institutions for innumerable reasons. Most of the persons who have been responsible for steering the affairs of most of the States all over the world so far have been playing the rôle of dictators of greater or lesser degrees. Strictly speaking, therefore, there has been hardly any democratic State anywhere in the world so far. Those States which claimed to be democratic so far in their social and political structures were not genuinely democratic for in such socio-political structures importance was given mostly to certain specific persons or group of persons, but not to all citizens. The social and political liberties were not effectively guaranteed to all citizens and the dignity of their personalities was not truly recognized in most of the seemingly democratic States. As a general rule in most

of the States the potentially creative persons lose their identities in the 'herd' of mediocre persons and they are not able to stand out prominently with their unique norms in the field of the administrative machinery of the States. It is mainly because of the fact that in most of the States of the world the 'superior mediocres' predominate in the administrative machinery of the States and play a dominating rôle in steering the affairs of the States. If per chance there are certain creative persons in the administrative machinery of a State, they find themselves cornered by a host of 'superior mediocres' as a result of which their creative activities in the field of the administration of the government is rendered ineffective by the latter. Consequently, the affairs of most of the States are steered by 'superior mediocres', and the latter do not generally allow the diversity of norms to flourish in the realm of the social and political structures of the States. The only persons who do not fall under the category of either the leaders or the led are those who have genuinely creative personalities. Creative persons generally do not uncritically accept the norms of the various social and political institutions. Their prime concern is with the creation and appreciation of novel and original values. They retain the uniqueness of creative teleology so long as they do not fall under the category of the leaders and the led. But the moment they assume the rôle of leaders they succumb to the human frailty of acquiring fame and there is inevitable decadence in the uniqueness of their creative teleology and their chief aim is to come to the limelight through the creation of shallow and superficial values for catering to the tastes of the mediocre admirers. They generally lose their talent for creativity by taking 'delight in cheap popularity and degrade themselves to the position of 'superior mediocres'. Such creative persons who degrade themselves to the position of 'superior mediocres' are jealous of the genuinely creative persons and the former adopt innumerable subtle devices for suppressing or thwarting the creative expressions of the latter. Thus, a subtle and implicit conflict goes on in human societies between creative persons and 'superior mediocres'. On the one hand, creative persons create values for their own sake, and influence the masses of mediocre

persons indirectly through the creation of novel and original values and sometimes through persuasive arguments. 'Superior mediocres', on the other hand, generally employ innumerable subtle devices for coercing mediocre persons so that they may uncritically accept the norms set up by the former. When 'superior mediocres' are able to mobilize sufficient strength under their command, they generally employ violent repressive methods for putting down all oppositions and criticisms of the opponents for perpetuating their command over mediocre persons. Thus, on the one hand, creative persons try to keep themselves aloof from the various institutions of mediocre persons as far as possible, and indirectly give new orientations to societies for ultimately realizing the ideal of creativity. 'Superior mediocres', on the other, try their utmost for creating all sorts of obstacles on the way of creative persons from expressing themselves freely. This subtle conflict between creative persons and mediocre persons is going on in every sphere of life either implicitly or explicitly.

The majority of persons who constitute the bulk of most of the societies of the world at present are mediocre persons. Most of the societies of the world have transcended the aboriginal stage and have transformed themselves into mediocre societies, and those societies which are still in an aboriginal stage are in the process of fast transforming themselves into mediocre societies. There are a few civilized societies in the world at present and the bulk of mediocre persons in such societies seem to have greater preference for the norms which are set up by civilized and cultured persons than by those that are set up by 'superior mediocres' because they find that the former have greater lasting and universal significance than the latter. However, sometimes mediocre persons are swayed by the blandishments of 'superior mediocres' to accept their norms. It is evident, then, that mediocre persons constitute the vacillating section of a society. The bulk of a society is constituted by mediocre persons. Creative persons and 'superior mediocres' constitute the very small fractions of a society. They have generally sets of well-defined norms. Mediocre persons who do not generally have norms of their own, borrow the norms which are set up by

persons with greater mental acumen than themselves. They behave mostly in accordance with the norms set up by 'superior mediocres' or creative persons. It is evident, then, that the course of movement of human history depends, to a very great extent, upon the decision that is taken by mediocre persons to conform their behaviour to the norms either set up by 'superior mediocres' or by creative persons. However, since the behaviour of mediocre persons is governed mostly by pragmatic considerations they are attracted more by the norms set up by 'superior mediocres' than by those set up by creative persons because they generally expect that conformity to the former would yield more immediate results than the latter. Mediocre persons generally learn the lessons of their lives when they sometimes find that they are taken almost to the verge of their doom due to the wrong decisions taken by their mediocre leaders in the different spheres of life. Many States of the world were completely ruined from the beginning of human history due to wrong and short-sighted decisions that were taken by kings, dictators, war lords and the like of those States. Likewise there were different forms of degradations in the various institutions of a society because the 'superior mediocres' who steered those institutions adopted wrong and short-sighted policies for their institutions. Mediocre persons had to pay heavy price for their uncritical conformity to the norms that were set up by 'superior mediocres' in the various institutions. They ousted the 'superior mediocres' from their exalted positions only when they were thoroughly disillusioned by the false promises and blandishments of the latter. They even overthrew the most powerful tyrants through organized public opinion, large-scale strikes, violent revolutions and the like. They could realize the real significance of the values created by creative persons only at times of crisis. They could realize at least partially that the values created by creative persons were the expressions of faint and fragmentary glimpses of reality that the latter had through intellectual or intuitive apprehension. They could appreciate that the values created by creative persons had lasting significance and that they were beneficial for the well-being of the entire human race. But this realization of mediocre persons was often very short-lived for

cunning 'superior mediocres' were able to outwit and dupe the former by devising novel and subtle techniques of deception to suit changing social and political conditions of a country. Thus, once again mediocre persons were subjected to experimentation by designing 'superior mediocres'. Mediocre persons of most of the societies all over the world were the objects of experiments in innumerable ways by successive waves of 'superior mediocres' in course of different ages. They had to bear the brunt of the disasters when experiments in various fields of life ended in failures. Yet it was an irony that leaders of various institutions could flourish and continue to exist only on the support of mediocre persons of those institutions. It is evident, then, that if mediocre persons of societies had to face poverty, suffering and privation, they had to do so mainly due to their wrong choice of leaders. Mediocre persons of most of the societies were mainly responsible for changing the course of movement of human history in spite of the fact that 'superior mediocres' actually brought about the actual changes in societies. They were, as it were, willing passengers of the social omnibuses which were steered by 'superior mediocres' to whom the former surrendered themselves.

Creative persons have been always there in most of the societies as the eye-openers of mediocre persons from the beginning of human history. They gave sufficient warning to mediocre persons to be on their guard against the blandishments of 'superior mediocres', but most of the mediocre persons seldom heeded the sensible warning of creative persons except at times of crisis. Creative persons were not like 'superior mediocres', but rather they were supermen. Their actions were not ordinarily guided by biological needs or pragmatic considerations for their biological and social needs were either satisfied or they were able to get over them through their spontaneous *yoga* and due to their undivided concentration on their creative ends. They completely dedicated themselves to the pursuit of knowledge and their sole aim was to get glimpses of reality through various methods of knowledge and to create values whenever they got occasional glimpses of reality. They no doubt lived and moved about in societies that were dominated by mediocre persons,

but they were actually denizens of the world of creativity. Mediocre persons could very rarely comprehend the entire significance of the values that were created by creative persons, but they were able to partially comprehend their significance, and they could faintly grasp the fundamental truth underlying them. Creative persons were completely unconcerned by material gain, reward, fame and the like in the course of their pursuit of knowledge and creation of values. Their lives were completely dedicated to non-attached love of knowledge and to the creation of values in order to give expression to their glimpses of reality from various points of view, viz., the points of view of an educationist, an economist, a biologist, a physicist, a historian, a philosopher and so on. They had indirectly suggested various ways through their values by drawing inspiration from which mediocre persons could get glimpses of reality. But the paths suggested by creative persons were rather too difficult for mediocre persons to follow, and the latter miserably lagged behind the former in their creative advance. However, creative persons seldom cared to look back and stretch their helping hands to the hosts of mediocre persons groping miserably in the wilderness of ignorance, for the former had chosen to be lone travellers with firm resolution on the paths which ultimately converge and unite and progressively show transition from darkness of nescience to light of wisdom. Mediocre persons could, therefore, never expect that creative persons would guide them in their various affairs of life, but they could only depend upon the latter for inspiration. Mediocre persons could raise themselves to the position of creative persons mainly through their own efforts. The guidance of creative persons that mediocre persons receive is generally indirect, but even though it is indirect it is most potent and far-reaching. In fact, the cultural progress that has taken place in human history so far is mainly due to the indirect influence of creative persons in various societies. Creative persons are the unrecognized guides of human destiny. Their indirect influence on the masses of mediocre persons is the most potent factor in ultimately determining the course of movement of human history.

Human history is passing through a most critical period in

the modern age. Once again masses of mediocre persons are under the octopus grip of their leaders to whom they have surrendered themselves. Some of the most civilized States of the modern world are in the possession of the most destructive weapons with which they can even annihilate the entire human race. There is, therefore, potential danger for the entire human race because some of the most powerful States of the modern world are in the possession of some of the most destructive weapons. Some of these garrison States are deliberately postponing their trial of strength through open war with one another because they are becoming more and more conscious of the fact that an armed conflict may lead to mutual destruction. However, the indefinite postponement of an open war for trial of strength between hostile States does not necessarily rule out the possibility of the destruction of the entire human race, but it apparently seems to enhance the potential danger with the passage of time because there is frantic race between mutually hostile States for the invention, manufacture and piling up of the deadliest armaments. Is it, therefore, possible that the entire human race may get destroyed by the modern nuclear warfare that may take place at any time in future? It is not our purpose to predict the future of human race, but our main task in this chapter is to discuss some of the fundamental laws which govern the movement of human history. Nevertheless, it may be said without making any pretension of predicting the future of mankind that through one wrong decision on the part of the leaders of a powerful State to wage an open war against another powerful State may plunge the entire human race in a state of cataclysm. If, on the other hand, an armed conflict between hostile States is indefinitely postponed, it will be advantageous for the entire human race, for creative persons in the various fields of human life will be able to extend the range of their creative activities and thereby indirectly influence the formation of sane and healthy public opinion throughout the world. If a sane and healthy public opinion is created throughout the world against the use of nuclear and other devastating weapons, the possibilities of global war will be considerably minimized. However, in spite of the cold war that is at present going on between hostile power blocks

of the modern world there are ample signs of good-will, amity and mutual understanding between creative persons of different societies in various fields of life. There seems to be perfect accord between scientists, philosophers, artists, social workers, athletes and so on of different States. The only persons amongst whom there is no accord are the political leaders of mainly those States which form the power blocks of the modern world. The actions of those leaders are seldom actuated by good-will for those States whom they consider to be enemies in spite of the fact that they generally indulge in platitudes and make pretensions of good-will. Their main purpose is to make subtle manoeuvres for outwitting and, if possible, overthrowing their enemies at the earliest possible opportunity. They are the real source of disunity in the modern world. If, however, the global war is postponed indefinitely, creative persons are likely to gain ground in every possible field of human life, and if they are somehow able to occupy the position of 'synthesizers' in the various States, the possibility of war between the latter may be considerably minimized. If such a state of affairs comes into existence in the world in future, an atmosphere is likely to be created for cultural diversity all over the world which may open up innumerable avenues to the potentially creative personalities for their novel creative adventures. Our study of human history gives sufficient indications to us that humanity is progressing culturally. There has been a definite ethical, intellectual and æsthetic advancement of the human race since the beginning of human history. The moral ideas of human personalities have progressively become more deep, subtle, consistent and comprehensive in course of time. The virtues of honesty, sincerity, good-will and fellow-feeling have developed considerably particularly in those personalities who are the members of civilized societies. It is an undeniable fact that humanity has definitely advanced intellectually. Tremendous progress has taken place in pure and applied sciences during the last few decades. Scientists have gained sufficient mastery over the forces of Nature through the development of their technological skill. There has been progress also in other branches of human knowledge and there has been convergence of the different branches of human knowledge resulting in the emergence of

entirely new branches of human knowledge. Only there has been very little progress in constructive philosophy during the recent past because philosophers were very busy in purging philosophical theories of their defects through logical analysis. However, that was an important step for genuine advancement of philosophical knowledge. In fact, there has been some genuine progress in philosophical knowledge through the channel of pure sciences. Finally, there has been sufficient advancement in the æsthetic sense of mankind in the course of the movement of history. The æsthetic ideas of creative artists are expressed in innumerable subtle ways in different spheres of life. The only way in which mankind has not apparently progressed in perhaps in its religious aspect. However, it seems that the retardation of the religious progress of mankind is not real, but only apparent. It is true that intellectually advanced human personalities are losing faith on the ritualistic aspect of religion because they find that the latter are at present nothing but superstitions lacking in their original significance. Moreover, the impact of modern science is so great on human personalities that they do not generally believe in anything for the existence of which there is no definite empirical evidence. That is the reason why human personalities are losing faith in God. We believe that no positive harm is done to human personalities if they discard some of their unfounded dogmas. We believe that human personalities who are critical of unfounded dogmas are getting prepared to accept some other form of religion which is likely to emerge with a more sound basis. In fact, there are certain signs which indicate that religion will perhaps emerge in future through the channel of pure sciences. Scientists in different branches of sciences are making persistent attempts to know the fundamental constituents of reality and the laws which govern them. It was mentioned in the earlier chapters that some of the fundamental constituents of reality and the laws governing them had already been discovered. Moreover, there are signs which indicate that scientific knowledge will ultimately get merged into philosophical knowledge through the channel of axiology in the general sense. It may also be expected that religion will emerge with more sound footing when there is confluence of sciences with axiology in the

general sense. In fact, there is a strong under-current of religious feeling in its deeper sense amongst the intellectuals of civilized societies. The urge to comprehend reality and its laws clearly and comprehensively is stronger to-day in human minds than ever before. These facts lead us to conclude that human history is progressing in its creative adventure with the passage of time. There is not only gradual widening of the area of creativity in different spheres of human life, but there are also depth, intensity and rich variety in creative expressions in the course of the movement of human history. Human history perennially progresses in its creative adventure through the superjection of creativity of creative personalities.

CHAPTER IX

THE NATURE OF SPACE-TIME

The problem of space-time is one of the knottiest problems of philosophy. Philosophers, physicists, astronomers, mathematicians and theologians have been persistently trying to solve the riddle of space-time through all ages; but very often instead of solving the riddle of space-time consistently they tried to cut the Gordian knot from their particular standpoints; and hence, the piecemeal approach to this problem by various thinkers has given rise to hot controversy amongst philosophers and scientists. However, rapid developments in modern physics and astronomy have radically changed some of the old conceptions of space and time. Some of the modern physicists have established it beyond doubt that space and time are not two independent entities, but rather they are the two aspects of the same reality. Hence, reality cannot be regarded as a static principle in which all the values are eternally realized; but, on the contrary, reality is continually changing and evolving. We shall give an exposition of our view of space-time after briefly examining the views of some of the outstanding philosophers and scientists on the nature of space-time.

According to Kant, space and time are *a priori* forms of intuition. In Kant's view 'intuition' means immediate awareness of objects. Space is the form of external sense and time is the form of internal sense. In the process of knowledge matter comes from the external world and form is given to it by our perceptual faculty. Space and time are the pure forms of perception. They do not have objective existence apart from perception. A perceiving individual arranges the manifold of his sensibilities under the forms of space and time. Space is not an empirical idea which has been derived from external experience.¹ It is rather a condition of the possibility of phenomena. It is a subjective condition under which the perception of external objects

¹ Kant, I., *Critique of Pure Reason*, New York, Macmillan Co., 1924, p. 18.

is possible. It is not a real and objective phenomenon like Newton's conception of space. Likewise in Kant's view, time is not an empirical idea derived from experience. Time is a necessary condition of all perceptions.² It is the condition under which all perceptions are possible. It is the condition of external as well as internal sense. It does not exist by itself as a real thing. It cannot be predicated of things-in-themselves. It is real in so far as it is a form of human consciousness. It is the subjective condition of all human perceptions. It is nothing apart from the subject.³ It is subjectively real with regard to our internal experience. Space and time regarded as real are riddled with contradictions. They are not the attributes of external objects, but rather they are the ways by which senses perceive objects. It is impossible to perceive external objects without the operation of the outer and the inner senses. Space and time are, therefore, subjective.

Kant's view of space and time is open to certain criticisms. Even if it is taken for granted that space and time are the *a priori* forms of perception, it does not necessarily imply that they are purely subjective in their nature. Space and time are objective and real. The reality and objectivity of space and time have been empirically verified through scientific investigations. There are instruments by which the objective existence of space and time can be faithfully recorded. It is evident, then, that space and time are not merely forms of perception, but they have definitely objective existence. Our knowledge of objective space and time may not be absolutely correct and comprehensive, but it cannot be denied that objective space and time are certainly there in Nature. It may be possible that there is some form of correlation between objective space and the time that is found in Nature and space and time as the subjective forms of perception. The defect of Kant's view consists in the fact that he admitted the existence of space and time as merely subjective forms of perceptions, but denied the objective correlations of the former.

Hegel maintained that space and time were not elements of

² *Op. Cit.*, p. 24.

³ *Op. Cit.*, p. 28.

pure thought, but rather that space and time were purely logical concepts. According to Hegel, reality is timeless. Becoming is a purely logical concept. In the dialectic process of reality there is neither transition from one event to another nor from one point of space to another, but there is passage from one idea to another which are logically connected. The dialectical movement of reality is a logical one in which there is transition from one premises to conclusions in the train of syllogisms. The logical movement of reality involves neither space nor time. Time which is a lower category does not belong to the Absolute Idea which exists eternally in its perfection. McTaggart remarked that the dialectic movement from one lower category to the higher in Hegel's system was a reconstruction and not a construction.⁴ In Hegel's system, therefore, the dialectic process of reality is not in time, but it is an eternally realized Idea. However, in Hegel's view, time is a phase in the development of Nature. It is not because things appear in time that they are finite, but it is because they are finite that they appear in time. Time is an aspect in Nature's process of development. Nevertheless, even though time is a stage in the development of Nature, reality itself is timeless.

Hegel's view of space and time is open to certain criticisms. The defects in Hegel's view of space and time are due to the defects of his metaphysical system. In Hegel's view the Absolute exists eternally in perfection, and it is only a delusion on our part which makes it suppose otherwise. The Absolute Idea is eternally perfect and the movement from the lower category to the higher is a reconstruction and not a construction. The idea of movement is only in our minds. The human mind traces one after another the succession of the different categories of logic, which in reality are not in temporal order, but which continually co-exist in the Absolute Idea. Now, if everything that is real is rational as Hegel maintained, then how could an irrational delusion of time occur to our minds? Obviously, Hegel's philosophical standpoint involves a dilemma, namely, either an irrational idea is real or it is not. But if an irrational idea has

⁴ *Studies in the Hegelian Dialectic*, p. 160.

real existence, then reality is not perfectly rational. However, such a conception goes against Hegel's main thesis that reality as a whole is perfectly rational. On the other hand, if reality is regarded as timeless, changeless and eternally perfect, then it is meaningless to say that there is dialectic process in the Absolute Idea. If the dialectic process of reality is a real process which involves the synthesis of thesis and antithesis, then it must admit of the real existence of time. It is obvious, then, that if the dialectical process of reality is real, it must admit of the existence of real time through which the dialectical process takes place; otherwise the former loses its real significance. Hegel was, therefore, unable to give a satisfactory explanation of the nature of space and time.

Whereas Hegel's view regarding the nature of space and time was rather vague, Bradley emphatically denied the real existence of space and time. According to Bradley, the Absolute transcends space and time. Space and time are appearances. It is not possible for us to form a self-consistent idea of space and time. The idea of space presents a difficulty which is involved in its very nature, *viz.*, the continuity and discreteness of space.⁵ The nature of space necessitates that it be endless, and it also necessitates that it has an end, for the dual nature of space can be explained only on this ground. Bradley examined the enigma of space antithetically. In his view, space is not a mere relation.⁶ For space consists of parts and these parts are also spaces which would be a collection of solids. The relation would join spaces which would not be mere relations. The collection of spaces would not be space, if it is taken as a mere interrelation. This leads to the position that space is nothing but a relation of spaces. But such a position is self-contradictory. On the other hand, if space is taken as a whole, then it is more than a relation. But the conception of parts without relations does not convey any sense. If it is assumed that extended space has parts, then those parts also would be extended, and the latter would have further parts and so on *ad infinitum*, and that would

5 Bradley, F. H., *Appearance and Reality*, p. 36.

6 *Op. Cit.*, p. 36.

lead to no solution of the problem. If space is capable of being divided without limit, then it admits of differences within itself. These differentiations within space involve relations. But when space is divided into its sub-parts, then it is found that space consists of nothing more than relations. If it is argued that space or a part of it is a solid, then also it involves self-contradiction. For a solid thing is extended, the extended is a collection of relations, and that collection would be a further collection of related parts and so on *ad infinitum*.⁷ Thus, the idea of space involves relations and any relational experience gives us knowledge of appearance, and not of reality. Finally, if it is assumed that space is empty, then it does not convey any meaning and its mode of existence is inconceivable. The conception of empty space is a mere abstraction.⁸

Bradley next examined the nature of time. According to him, time is an appearance. Sometimes time is conceived in terms of space. For instance, sometimes time is considered to be a line extending from the past to the present and from the present to the future like a stream. If time is conceived in terms of space, then the criticisms that have been levelled against space, also hold good of time. Further, if time is considered to be a relation between units without duration, then the whole time considered by itself has no duration, and in that case it can hardly be called time. If, on the other hand, time as a whole is considered to be duration, then its units also must possess it and in that case they would cease to be units at all for a mere duration itself does not admit of any parts. But time without parts is unintelligible. Time necessarily implies 'before' and 'after'. Consequently, time which does not involve this diversity cannot be regarded as time at all. Time, therefore, has to be considered under relations. If time is conceived in terms of relations, the difficulties connected with relations crop up again. If it is assumed that time is to be understood only in terms of 'now', then the question arises whether this 'now' is a simple and indivisible notion. But even the conception of 'now' implies 'before' and 'after' preceding and

⁷ *Op. Cit.*, p. 37.

⁸ *Op. Cit.*, p. 38.

succeeding the former. Consequently, time is not a simple and indivisible notion, but it involves complexity within its own nature. Obviously, then, diversity is involved in the conception of time even if it is conceived in terms of the present. There is some process within the conception of 'now' and involves a lapse of time and thus introduces diversity within it. Time involves a relation of the past to the future, and this relational experience reveals only partial and contradictory appearance and not reality underlying it.⁹ Therefore, the conception of time, like space, presents an insoluble dilemma, and it cannot be conceived in any other way than relations, and time as a system of unresolvable relations involves self-discrepancy. Nevertheless, even though space and time are appearances they are somehow absorbed in the unity of the Absolute.

Bradley's denial of the existence of space and time is open to certain criticisms. S. Alexander remarked that Bradley's analysis of space and time was wrong. He observed that space could not be regarded as an entity which was at rest as Bradley supposed. He pointed out that space was space-time. In his view, space and time are inseparable from each other. He remarked that contradictions occurred in Bradley's way of thinking because he separated space from time which was tantamount to the division of the indivisible.¹⁰ J. L. McIntyre observed that the difficulty with Bradley's doctrine of time was that no moment of time seemed to be an irreducible unit. In Bradley's view, each unit of time has still smaller units within itself and the process of division does not terminate anywhere. McIntyre remarked that since time was continuous any division that was made in time as in Bradley's analysis was bound to be arbitrary and unreal.¹¹ R. F. A. Hoernle observed that Bradley proceeded from a false assumption that reality was absolutely self-consistent, and, therefore, all the contradictions that were found in appearances must be somehow reconciled in the Absolute. In Bradley's view time is one such appearance, and hence, it is full of contradictions. But Bradley did not state how time was ultimately reconciled in

⁹ *Op. Cit.*, p. 42.

¹⁰ *Space, Time and Deity*, Vol. I, p. 260.

¹¹ *Mind*, New Series, Vol. IV, p. 344.

the Absolute. He observed that the real nature of time could not be understood through actual experience or the methods of sciences. He called this kind of procedure as 'illegitimate appeal to practice'. Bradley was more keen on showing the inconsistencies of appearances, but he was not able to give any positive answer to any of the problems that he raised. Hoernlé remarked that Bradley was not able to show how appearances were ultimately reconciled in reality.¹² J. A. Gunn commented that Bradley first raised the dust and then complained that he could not see through it. Bradley first set up a standard of truth, and then if anything fell short of it, he condemned that as an appearance. Bradley was keen on setting up dialectic patterns to show that contradictions were necessarily involved in any finite experience. Gunn observed that contradiction was a feature of certain propositions, but not of existences or facts like time, and that time could not itself be contradictory as Bradley supposed.¹³ It is obvious, then, that Bradley's analysis of space and time is fallacious because his basic assumptions are wrong.

Whereas Bradley considered time to be an appearance, Royce maintained that time was real. According to Royce, the time series is perceived as a whole. In change we perceive the succession of events, but we comprehend the succession of time series as a whole. For instance, we grasp a poem at one glance. Each element of succession is present to consciousness at once and not as before and after. We take note of the facts that take place at different times at once. An individual lives in time in the process of realizing his goal. The purpose of life of an individual is fulfilled in time. In other words, the meaning of life is expressed in the sequence of time. To a finite individual the present means the unity of time series in the consciousness having an internal meaning. Time is a form of will.¹⁴ An individual experiences time in the act of realizing his goal. The teleological striving of a finite individual is consummated in his union with God. When the temporal order is viewed in its wholeness it is regarded as the Eternal Order. When the Absolute or God

¹² *Op. Cit.*, Vol. XIV, p. 332.

¹³ *The Problems of Time*, pp. 343-4.

¹⁴ Royce, J., *The World and the Individual*, Series II, p. 133.

comprehends the entire temporal sequence at once it is called the Eternal Order.¹⁵ The Absolute comprehends the entire world along with its creatures at one glance. Royce gave the analogy of a musician in whose consciousness a melody is present before the musician actually performs it. Likewise, the past, the present and the future of an individual are at once present in the comprehension of the Absolute.¹⁶

Royce's view of time suffers from the defect of finalism. He regarded the universe as a finished product, an accomplished fact and an eternally realized ideal. But such a view cannot satisfactorily explain the dynamic and the teleological nature of reality. If everything is at once present in the single glance of the Absolute, then time loses its significance and along with that the entire evolutionary process of the world and the free creative activities of finite individuals. Royce's analogy of a musician is inadequate. A piece of music is not necessarily repetition of the one that was composed long ago. When a musician composes a song for the first time the entire musical piece is not present in his mind with all its minute details. The song is present in the mind of a musician at the most in the form of an idea which finds its full expression through the process of actualization of that idea into a pattern of sounds. The song is present in the mind of a musician in the form of an idea of harmony of sounds which works itself out into minute details when he is in the actual process of singing. This is true of all new creations and each act of creation gives novel experience to the creator also. The original values created by creative persons not only give delight to them but also take them by surprise by the startling originality of the former. It is evident, then, that any creation necessarily implies time. Royce tried to remove this difficulty by pointing out that finite individuals were like puppets in the hands of God, and that God had foreknowledge of all human activities. But even this analogy of Royce is poor for the perception of any movement whether it is that of a living being or a puppet implies the mind's act of tracing that movement which

15 *Op. Cit.*, p. 138.

16 *Op. Cit.*, p. 148.

implies time. Royce was not justified in describing finite personalities as teleological, ethical and free beings, if he denied the existence of the real sequence of time. Moreover, Royce's conception of eternity seems to be unsatisfactory. Eternity is not a mere static unity, but it means the endless dynamism of reality. Royce's conception of a block universe with all values eternally realized in it, therefore, seems to be logically unsound.

Bergson maintained that reality was in perpetual flux. According to him, it is the *élan vital* or the vital upsurge of life which goads the universe in its perpetual process of development. Duration is the essential quality of the upsurge of life. It is a dynamic principle and it is ceaselessly flowing for the creation of something new. Space is static and metaphorically speaking it is like the waste land where lies the refuse thrown off by the process of creative evolution.¹⁷ Duration, on the other hand, is the principle of creative evolution. Time cannot be measured by human understanding because in trying to do so the latter would distort the nature of duration. The moments of inner duration are not external to one another. Duration is the very stuff of reality which ceaselessly flows forward and progresses indefinitely. Duration is a continuous process which gnaws into the future.¹⁸ It is the advancing reality of the living present which is itself unceasing. When duration is restored to its original unity it appears to be a wholly qualitative unity.¹⁹ Time cannot be conceived in terms of a series. Pure consciousness cannot perceive time as a sum of units of duration. Time cannot be conceived in terms of space.²⁰ Space and time are different from each other.

The main contribution of Bergson consists in the fact that he suggested that reality was dynamic and creative. In this respect Bergson's contribution to philosophy is unique for there were hardly any philosophers in the entire history of philosophy who believed in the dynamic aspect of reality. However, Bergson's view is open to certain criticisms. Bergson made a

- 17 Balfour, A. J., *Theism and Thought*, p. 224.

18 Bergson, H., *Creative Evolution*, p. 5.

19 Bergson, H., *Time and Free Will*, p. 229.

20 Bergson, H., *The Creative Mind*, p. 13.

mistake when he identified reality with duration itself. In his view, time is independent of space and matter, and also it is not in any way associated with teleology. It is difficult to conceive how pure duration without any material basis and teleology can perpetually create. Further, reality of finite time cannot be denied. The creation of something new has a beginning in time; and hence, a creative act involves finite time. Finite time cannot be regarded as homogeneous with duration. Besides this, it is doubtful whether there is any undifferentiated duration. Time would lose its significance if it were bereft of its successional character with the distinctions of the past, the present and the future. Evolution of our world can be explained adequately on the basis of this successional character of time. A present event is different from its past antecedent out of which it has evolved and the future possibility into which it may transmute itself. It is evident, then, that events have a successional character. The evolutionary process is characterized by continuity as well as discontinuity. In other words, there is continuity in the evolutionary process of our world in the midst of discontinuity. One stage of evolution is followed by another which are mutually distinct in spite of the close succession of the various stages of the evolutionary process. A. S. Pringle-Pattison aptly remarked that Bergson's tendency for identifying duration with the living present as distinguished from the past and the future involved an abstraction.²¹ Moreover, Bergson's conception of space as a waste place where the refuse of creative evolution is deposited seems to be an absurd idea. Space is not a shadow or a degradation of time as Bergson believed, but it is vital to time's existence. In fact, space and time cannot be regarded as independent of each other; and hence, any one of them cannot be regarded as inferior to the other. So Alexander remarked that Bergson was not justified in expressing his abhorrence for the spatialization of time.²² In fact, duration is spread out in time. Space cannot be separated from time, but they involve each other as aspects of the same reality.

S. Alexander did not differentiate space from time like some

²¹ *The Idea of God*, p. 377.

²² *Space, Time and Deity*, Vol. I, p. 149.

of the earlier philosophers. He maintained that space and time were interfused and he called them by one name, viz., 'Space-Time'. According to him, Space-Time is reality itself. It is the stuff out of which matter and mind emerge. It is not an aggregate of parts, but the parts can be distinguished within it as fragments of the whole. Space and time are the infinite whole of parts. Finite spaces and finite time are sensibly continuous and uninterrupted and they are included in infinite space-time. Space and time are not independent of each other, but they are interdependent; the one cannot exist in complete isolation from the other. They are the inseparable aspects of the homogeneous continuity. There can be no instant of time without its corresponding position in space and there can be no point of space without its corresponding position in time. There are no such things as pure spatial points or pure instants. A spatial point occupies an instant and an instant occupies a point in space.²³ Space completely fills time and time completely fills space. Space-time is a perfect continuum. There is no vacuum in space-time. There is nothing static in the universe. Space-time is in continuous motion. The world is evolving through the movement of space-time. It is growing due to the perpetual motion of space-time.

There are certain elements of truth in Alexander's view of space-time. It is true that space-time is a continuum and that space and time necessarily involve each other. However, Alexander's view is open to certain criticisms. He wrongly identified space-time with reality itself. He believed that matter, life and mind emerged out of space-time. It is difficult to conceive how pure space-time which is, devoid of material and mental aspects, can exist. Space-time cannot evolve in a progressive manner, if it is completely devoid of teleology. If space-time is non-material, non-psychical and non-teleological, it cannot give rise to matter, life and mind through its process of evolution. It is difficult to conceive how space-time which is devoid of content can exist and perennially create.

A. N. Whitehead was influenced by the theory of relativity of the modern physicists and he regarded the fundamental rela-

²³ *Op. Cit.*, p. 48.

tions in Nature as spatio-temporal. However, owing to his idealistic tendency he refused to attribute physical properties to space. In this respect Whitehead's view differs from that of Einstein. According to Whitehead, the multiplicities of actual entities which emanate from God have spatio-temporal relations, but when these entities are synthesized and reabsorbed in God they transcend space-time. Space-time is an aspect of the concrescence of the spiritual reality. The extensive space-time is the result of the limitation put upon the abstract potentiality by the actual world.²⁴ The eternal objects are spaceless and timeless; and hence, they are also changeless. For instance, an object is composed of a succession of actual entities in which one actual entity gives place to another; but changes do not take place in these entities themselves. Whitehead compared his idea of an actual entity with the theory of monads of Leibniz. In his view, a monadic actual entity is the concentration of the world in one unit of complex feeling. The actual entities have no external adventure, but they have only internal progress of becoming. Their birth is their death.²⁵ In the process of becoming an actual entity is not extended in space-time. Space-times are merely relations amongst actual entities which are accomplished facts. The creative advance of actual entities does not involve a succession of physical time. The present stage of the creative advance embodies in itself the past history of the world. From this point of view Whitehead agreed with the Newtonian theory that a portion of space could not move. In his view, actual entities do not move; they are where they are.²⁶ God is the primordial entity and the presupposition of the world. He is the concrete realization of all possible entities. The world transcends the space-time order as it is united and absorbed in the all-inclusive experience of God.

Whitehead's view of space-time is open to certain criticisms. It seems that in Whitehead's view finite space-times are not real, but they are only relations between actual entities. Such a view

²⁴ *Process and Reality*, p. 123.

²⁵ *Op. Cit.*, p. 124.

²⁶ *Op. Cit.*, p. 113.

of space-time seems to be wrong for space-time is not a relation between entities, but it is the necessary aspect of any existing entity. Space-time is co-existent with any existent entity. Finite space-times do not have merely relational existence, but they constitute the very nature of finite entities. It is not possible to conceive of any finite entity which is not in space-time. No entity however minute is changeless. Whitehead's conception of the relational existence of space-times which perish as soon as they are born along with actual entities seems to be wrong. There is neither complete annihilation of existing entities nor of finite space-times for finite space-times are co-existent with existing entities. Whitehead believed that space-time was an aspect of God's consequent nature. But God is beyond space-time both in his primordial nature and in the final stage of His consequential existence. In this respect Whitehead's view does not differ radically from that of Royce which has been already criticised. If God is beyond space-time, how can He express Himself through spatio-temporal relations or finite space-times. Moreover, if actual entities are essentially changeless, how can they make any creative advance? It appears, therefore, that Whitehead could not free his philosophical standpoint from the conception of static reality which he denounced so vehemently.

The views of some of the outstanding philosophers on the nature of space-time were discussed so far. It was found that the views of most of the philosophers on the problem of space-time were inconsistent and unsatisfactory. In the following few pages the views of some of the outstanding physicists on the problem of space and time will be discussed in the light of its historical background.

Newton maintained that space and time were absolute. In his view, space and time are mutually exclusive and independent of each other. The manifestations of absolute space and absolute time are entirely different. The absolute space remains always similar and immovable. It is boundless and empty. It is the receptacle of all physical objects. However, space exists independently whether physical objects exist in it or not. Its immobility remains unaffected by the motion of physical objects in it. Edmund Whittaker observed that Newton's conception

of space was infinite in its size, uniform in its character, continuous in its structure and Euclidean in geometry.²⁷

According to Newton, the absolute time flows on equably without any regard to anything external. Its flow is continuous and uniform. It flows on quite independently whether events take place in it or not. Relative spaces and times are not real. The absolute space and absolute time are entirely independent of each other. They are real, infinite and continuous. Absolute motion is the translation of a body from one absolute place to another.

Newton believed in the existence of God. According to him, God is eternal and infinite. God is not duration or space, but He endures for ever and is present everywhere.²⁸ Absolute space and time symbolize the omnipresence of God. God immediately and intimately perceives the events that take place in absolute space and time. He is also the ultimate source of motion of material objects.

Newton's view of absolute space and time is regarded as wrong by most of the modern physicists. Modern physicists are of the opinion that space and time are not mutually exclusive and independent of each other. According to them, space and time are the two aspects of the same reality. The conception of empty space and time which are devoid of any material contents or events seems to be an improbable hypothesis. Besides this, Newton was unable to relate finite space and times with absolute space and time. E. A. Burt remarked that the conception of absolute space and time ruled out the possibility of movement of sensible bodies with reference to the former. He pointed out that the sensible bodies could move only with reference to other finite bodies. Absolute space and time, therefore, have no significance from the finite point of view because the motion is judged only with reference to other finite bodies. Burt further remarked that God in Newton's theory of reality could not be strictly speaking expected to tell the distinction between relative and absolute motion for there was no focus of divine attention at any point

²⁷ From *Euclid to Eddington*, p. 13.

²⁸ Newton, I., *Mathematical Principles of Natural Philosophy*, Vol. II, p. 311.

to which the motion could be referred to, and that God being present simultaneously with all moving bodies everything would be at rest.²⁹ It is generally believed by modern astrophysicists that absolute space and time perhaps do not exist because they are not experimentally verifiable and that if they at all existed they could not be satisfactorily reconciled with finite space and time. It appears, however, that disbelief of modern astrophysicists in infinite space and time is due to the limitations of their methods of measurement. This sort of attitude of astrophysicists is unjustified because it is impossible in principle to measure infinite space and time by any measuring device for the immeasurable cannot be measured. It seems, therefore, that the criticisms of infinite space and time are not flawless. We shall discuss the problem of infinite space-time towards the end of this chapter.

Whereas Newton propounded a theory of infinite space and time, Einstein advanced a theory of finite and relative space-time. Einstein's theory of space-time has an interesting historical background which will be briefly discussed below.

Einstein's theory of space-time came as a reaction against Euclid's geometry. Euclid's geometry is based upon the conception of a flat surface or the idea of perfect space which can be stretched indefinitely without the possibilities of any angularities at any place and termination at any place. Euclidean space is an infinite, unbounded and a flat entity. In such Euclidean space the three angles of a triangle are always equal to two right angles and the two sides of a triangle are greater than the third. These deductions are based upon the assumption that all space is straight. Euclid's conception of space as a flat surface is similar to the belief of the ancients that the earth's surface was flat.

Lobatchevski, Bolyai, Gauss and Riemann deviated from Euclid's standpoint and observed that the geometry of a plane surface was not a logical necessity. According to them, the Euclidean space is not known in experience. It is possible to

²⁹ *The Metaphysical Foundations of Physical Science*, London, Routledge & Kegan Paul, 1950, p. 260.

build a new system of geometry with entirely new axioms other than the Euclidean. This new system of geometry is self-consistent. Riemann proposed certain new suggestions which became the foundation stones of the non-Euclidean geometry. He replaced the *a priori* geometry of Euclid by his elliptical geometry. According to him, the so-called 'straight lines' are the great circles that are traced upon a sphere. The arc of a maximum circumference of a sphere appears to be a straight line. Space involves a curvature and its total volume is finite. The volume of a sphere has three dimensions, *viz.*, length, breadth and thickness. The volume of a surface, on the other hand, has only two dimensions, *viz.*, length and breadth. Obviously, then, all lines return to themselves; for instance, if a particle moves along a line it will return to its original position. Consequently, if a triangle is drawn on spherical surface the sum of its angles is greater than two right angles. This is a positive fact which tallies with experience. The Riemannian space does not extend indefinitely in a straight line, but it is finite since it involves a curvature and the line comes back to its original starting point. Riemann maintained that the idea of a spherical volume finitized space, and that space was finite as opposed to the Euclidean conception of infinite space. Einstein adopted the Riemannian geometry because it conforms very closely to our experience. J. L. Coolidge aptly remarked that the mathematical aspect of the theory of relativity was mainly an elaboration of Riemann's analysis of space.³⁰

Minkowski brought another great revolution in the world-view by giving a unified picture of space and time. Hitherto space and time were regarded as mutually separate and independent realities. Minkowski for the first time suggested that space-time are basically identical and inseparable. According to him, space has three dimensions and time has only one dimension; but all these dimensions of space and time are united in such a way that they together constitute a four-dimensional space-time continuum. Space and time are not independent of each

30 *A History of Geometrical Methods*, Oxford, Clarendon Press, 1940, p. 76.

other, but they are the two aspects of the same reality. Space and time as mutually exclusive entities are never found in Nature. We generally make such distinctions due to our psychological peculiarities. Space and time, in fact, form a single systematic whole which alone can be said to have an independent reality. Every event in this world is a point in a four-dimensional space-time continuum and every happening a 'world line'. This union of space and time is the 'world.' The numerous fragmentary systems of space-times represent merely the different ways in which one unified system of space-time may be subdivided, and each such division has spatio-temporal characteristics. Minkowski's theory of space-time continuum has been confirmed by Michelson-Morley experiment.

Einstein developed his theory of relativity by assimilating the revolutionary doctrines of Riemann, Minkowski and others. His theory of relativity gave a shattering blow to the Newtonian conception of absolute space and time and it furnished the world of science with a new outlook on reality. One of the most important feature of this theory is that it has ruled out the conception of ether. Until recently it was believed by physicists that ether was a jelly like substance which filled and pervaded space and that it was drifted by the movement of material bodies. Michelson and Morley disproved the existence of the so-called 'ether-drift' by their famous experiments. The object of this experiment consists in comparing the velocity of light, which is a 'universal constant' its velocity being 300,000 km/sec., in different directions with the help of mirrors arranged in a particular manner. It is believed that the earth which is moving along its orbit round the sun at the velocity of $18\frac{1}{2}$ miles per second was producing an 'ether-drift' in the stagnant ether. If two rays of light are sent out, one in the direction of earth and one at right angles to it, they should take unequal time to cover the same distance for the light waves travelling along the ether drift should travel faster than the one travelling against the current of ether. But to the utter surprise of Michelson and Morley it was found that the two rays of light travelled the same distance within the same period of time. Thus, the Michelson-Morley experiment proved that no ether-drift was created by the

movement of material bodies. Einstein assimilated the result of this experiment into his doctrine and maintained that reality contained nothing else than matter and field. In his view there are two fundamental aspects of reality, *viz.*, matter and field. Matter is the region where the concentration of energy is greater and field is the region where the concentration of energy is small. However, there is no fundamental distinction between matter and field because the difference between matter and field is quantitative rather than qualitative.³¹ It is evident, then, that with the advent of the theory of relativity the conception of ether as a non-material phenomenon disappeared and it was replaced by the idea of space having physical properties. Space is not an empty receptacle in which physical objects are contained, but it is itself a material in its nature. Percy Nunn observed that according to the theory of relativity space itself had quasi-physical properties similar to those of matter.³² Hermann Weyl also subscribed to the same view and rejected the idea of an empty space. He maintained that there was duality of field and matter and that their relation was dynamic in which matter excited its field and the field acted upon matter.³³

Einstein's special theory of relativity is based upon the principle that it is impossible to detect uniform motion relative to ether.³⁴ He frankly admitted that he did not know the so-called absolute space. He maintained that space-time was relative and that motion was relative to a practically rigid body of reference.³⁵ He further pointed out that a body altered its position with time. For instance, a passenger in a moving train finds an aeroplane flying over the train. The motion of the aeroplane is uniform with reference to the uniform motion of the railway train. Thus, if a railway train is moving uniformly relative to the rigid ground underneath which is a co-ordinate system k , then an aeroplane (a mass m) is also moving uniformly to the second co-ordinate system k' (the railway train). This is the principle of relativity in its restricted sense. R. C. Tolman observed that the special

31 Einstein, A. and Infeld, L., *The Evolution of Physics*, p. 256.

32 *Relativity and Gravitation*, p. 34.

33 *The Philosophy of Mathematics and Natural Science*, p. 173.

34 Eddington, A., *Space, Time and Gravitation*, p. 20.

35 Einstein, A., *Relativity: the Special and the General Theory*, p. 9.

theory of relativity stated that one could speak of the relative velocity of two systems, but it was meaningless to speak of the absolute velocity of a system through free space.³⁶

According to Einstein, the events which are simultaneous to one co-ordinate system K are not so with reference to another co-ordinate system K' . Every system of reference has its own particular time. For instance, two search lights flash on a railway track simultaneously. Now, how can it be determined that the flashes of search lights fall simultaneously on two different points of the railway track? This can be determined in the following way: suppose M is the middle point between two lighted portions A and B of the railway track. In order to find the exact location of the middle point of the lighted portions A and B of the railway track two mirrors at right angles are placed on the supposed middle point M . If light waves travelling at the velocity of 300,000 km/sec. from the points A and B of the railway track reach the mirrors at right angles simultaneously, then M is the exact middle point between the two lighted portions A and B of the railway track. Now suppose that a railway train moves at a velocity of 60 miles per hour from the direction of the lighted portion A to the lighted portion B of the railway track. As the railway train moves over the railway track the search lights also fall on the two portions of the moving train A' and B' . Are the flashes of light at A' and B' simultaneous with reference to an observer on the moving railway train at the point M' which is at right angles to the mid-point M of the railway track? Definitely not. The light waves from B' will reach the observer at M' earlier than the light wave from A' since the railway train moves towards the direction of B' at a velocity of 60 miles per hour. It is evident, then, that the flashes of search light which are simultaneously for an observer standing on the ground at the mid-point M of the railway track are not so for an observer at M' on the moving railway train. Thus, two events cannot be simultaneous for different observers moving at different velocities. Each moving body has its own reference of space and time. Obviously, then, two events which take place simultaneously for

³⁶ *Relativity, Thermodynamics and Cosmology*, Oxford, Clarendon Press, 1950, p. 12.

a particular observer at rest are not simultaneous for an observer in motion. The idea of simultaneity, then, is a relative one. In other words, events which occur at a distance are not unique, absolute and permanently fixed, but the order of their occurrence varies from observer to observer in different motions. Einstein, therefore, discarded the idea of the classical view that time was absolute and that it was independent of a system of reference.

According to the special theory of relativity, space-time cannot be defined independently of motion. There is a close interrelation between space, time and motion. Every event takes place at a definite place and a definite time. It is, therefore, necessary to study the space-time relations of an event together. Hence, space and time are not absolute, but relative to the position and the velocity of an object. For instance, a chronometer attached to a moving system runs at a rate different from the one attached to a stationary system; and likewise, a measuring rod attached to a moving system alters its length in accordance with the velocity of the system. The chronometer slows down as the velocity of the moving system increases and the measuring rod shrinks in the direction of the movement of the moving system. Each moving system, therefore, has its own framework of space and time.

Einstein's general theory of relativity is an extension of his special theory of relativity. He gave a new interpretation of gravitation which was formulated long ago by Newton. Newton believed that there was gravitational force which kept stars and planets moving in their respective orbits. According to Newton's theory, a stone would fall vertically towards the earth's centre. In the absence of the principle of gravitation the atoms, planets, stars and galaxies would have scattered and disintegrated in a chaotic manner. Newton, therefore, maintained that gravitation was an active force which maintained the stability of the universe. In opposition to Newton's theory Einstein maintained that gravitational force was an inactive principle. According to him, there is no such thing as immediate action at a distance as it was suggested by Newton.³⁷ He replaced the

37 Einstein, A., 'Autobiographical Notes', *Albert Einstein: Philosophical Scientist*, Evanston, The Library of Living Philosophers, 1949, p. 61.

conception of the gravitational force by the gravitational field. He pointed out that the action of a body without some intermediary medium was not possible. For instance, a magnet cannot attract a piece of iron which is beyond the range of its attraction. According to Einstein, gravitation is the effect of the curvature of space-time of a material system. A material system moves freely along its path by adopting the easiest course within its space-time structure. Einstein maintained that there is the 'gravitational field' around a magnet which operates on a piece of iron and draws towards it.³⁸ The intensity of the gravitational field of a material system diminishes as we go farther and farther from it. Space-time is not of a Euclidean pattern in the presence of the gravitational field of a material system. According to Einstein, the gravitational field of a material system is the effect of the curvature of space-time which in its turn is dependent upon the quantity and distribution of mass of the material system. In other words, the curvature of space-time of a material system depends upon the strength of its gravitational field. A material system distorts the space-time continuum in its neighbourhood which is directly proportional to its mass. As a result of the curvature of space-time a falling body does not move in a straight line, but in a curvilinear motion. Space is so curved that a wave of light after travelling a long path would come back to its original starting point. The curvature of space depends upon the accumulation of a matter in a particular region with the ratio that the greater is the mass, the lesser is the curvature of space wrapping it. This curvature of space is determined by the gravitational field of a mass of matter. It follows from such a nature of space-time that a stone does not fall to the ground in a straight line, but in a curved line. The falling stone distorts the space in its proximity and it falls along the path of greater slope to the earth and not actually pulled by the gravitational attraction of the earth. The motion of a material system is not due to gravitational pull, but it is due to its nature of following the easiest way through its framework of space-time. The world suffers a curvature due to the presence of the gravi-

³⁸ *Relativity: the Special and the General Theory*, p. 63.

tational field around it. Space closes the mass of matter and wraps it completely. There is a connection between the density of matter and the curvature of the universe. It is a matter of common experience that the smaller is the radius of a circle the greater is the curvature of the circumference, while, on the other hand, if the radius of the circle is very great its curvature is very small. The curved space encloses the world within itself. It implies, then, that the total amount of matter that exists is limited, and that, therefore, the universe is finite.³⁹ Einstein believed that the universe was cylindrical in its structure.

Einstein's theory of relativity brought about great changes in physics and enabled us to discard some of the obsolete notions of physics. It was a great contribution of Einstein when he demonstrated by his mathematical and experimental evidences that space and time involved each other in a material system. It was also a great contribution of Einstein's theory of relativity when he proved that events could not be considered as occurring simultaneously with reference to different observers in different motions. A. A. Robb remarked that this aspect of Einstein's theory was accepted by physicists even though it struck at the very foundation of a long standing logical axiom: that 'a thing cannot be and not be at the same time'.⁴⁰ If two events are simultaneous, it may be argued, with reference to one observer, how can they be otherwise with reference to another observer in a different motion than the former? From the standpoint of formal logic such a view seems to be unsound. But Einstein's view is true because it tallies with actual experience. It is evident, then, that some of the axioms of formal logic are open to objections. Thirring remarked that our minds were formerly trained to believe that the conception of simultaneity of spatially distant events was given *a priori* and that it had absolute meaning.⁴¹ Einstein was responsible for changing this notion. This aspect of Einstein's theory has a philosophical significance that each observer has a unique point of view while observing the various events that occur in Nature. Hans Reichenbach observed that

39 Borel, E., *Space and Time*, p. 224.

40 *A Theory of Space and Time*, p. 2.

41 *The Ideas of Einstein*, p. 44.

the term 'relativity' involves the idea of plurality with reference to a certain definitional system. He observed that relativity did not mean the abandonment of truth, but that truth could be apprehended from various points of view.⁴² Furthermore, it is also a contribution of Einstein's theory of relativity that our universe is finite. It is accepted by almost all astrophysicists that the universe is finite. Apart from some of these merits Einstein's theory of relativity has certain limitations and defects. James Jeans aptly remarked that Einstein's theory of relativity told us nothing about the nature of things, but that it merely dealt with the measure of things in their mathematical terms. Hence, he remarked that the theory of relativity stated nothing about the nature of space-time.⁴³ Herbert Dingle also commented that Einstein's theory of relativity did not throw any light upon the nature of space and time.⁴⁴ It is evident, then, that the theory of relativity has no direct philosophical implications, but it merely tells us how to measure time in terms of space measurements. It does not throw any light on the fundamental nature of space-time. Besides this, Einstein could not satisfactorily work out his 'unified field theory'. Louis de Broglie observed that the goal of the general theory of relativity would be realized when it succeeded in satisfactorily interpreting the electromagnetic forces from the standpoint of the theory of relativity. He remarked that Einstein could not satisfactorily interpret the gravitational and the electromagnetic fields both together from the standpoint of the 'unified field theory' in spite of his persistent efforts.⁴⁵ These are some of the drawbacks of Einstein's theory of relativity.

Einstein's theory of relativity had a tremendous impact upon the development of the theories of the space-time structure of the universe. A passing reference will be made here to some

42 'The Philosophical Significance of the Theory of Relativity', *Albert Einstein: Philosopher-Scientist*, p. 296.

43 *Physics and Philosophy*, p. 68.

44 'Scientific and Philosophical Implications of the Special Theory of Relativity', *Albert Einstein: Philosopher-Scientist*, p. 551.

45 'A General Survey of the Scientific Work of Albert Einstein', *Albert Einstein: Philosopher-Scientist*, p. 121.

of the most outstanding modern theories of the space-time structure of the universe.

Einstein abolished the conception of infinite space and time and replaced it by the conception of a finite universe. Whereas Einstein suggested the idea of a cylindrical universe, de Sitter suggested the idea of a spherical universe. According to de Sitter, the universe is closed and static very similar to that of Einstein's conception of the universe. In his view, galaxies and stars change and evolve within the permanent framework of the universe. There is recession of distant material systems within the framework of the universe. In Einstein's conception of the universe, on the other hand, there is no room for the recession of galaxies. Einstein's universe is full of material systems which are all held apparently in perfect balance leaving no room for either contraction or expansion. The universe of de Sitter, on the other hand, is almost empty in the sense that the average density of matter is almost negligible. In reality, therefore, de Sitter's universe is not static, but it appears to be so due to the extreme sparseness of matter in the vast emptiness of the former. Newton's law of attraction is almost negligible in de Sitter's universe because the density of matter in it is extremely small. In Einstein's universe, on the other hand, the density of matter is so great that the law of cosmic repulsion is counterbalanced by Newton's law of attraction. There is, therefore, no possibility of expansion of the universe of Einstein. Eddington observed that these models of the universe had significance with reference to the different stages of the evolution of the universe. He pointed out that the evolution of the universe started with Einstein's model of the universe and that then it assumed various other models of the expanding universe, and that finally it would end with de Sitter's model of the universe.⁴⁶ The equilibrium of Einstein's universe became unstable as the universe expanded. The law of attraction between material systems progressively became more and more weak and the law of repulsion became predominant as the universe expanded. The expansion of the universe becomes faster as Newton's law of attraction decreases

46 *The Expanding Universe*, Cambridge, University Press, 1952, p. 48.

in its strength and the law of repulsion increased in its strength. The law of repulsion which was first suggested by Einstein in a different context states that the greater is the distance between material systems the faster is the velocity of recession between them. Abbé Lemaître slightly modified de Sitter's theory of the universe and maintained that the universe was expanding. E. Hubble also subscribed to the same view and maintained that the universe was expanding. He observed that the curvature of space was slightly diminishing as the universe progressively expanded and that the clusters of nebulae did not themselves expand in spite of the fact that the universe was expanding.⁴⁷ However, he admitted that most of the theories of the universe were incomplete and inconclusive. It may be possible that the universe as a whole came into existence at a given time. There is no definite evidence that the evolution of the universe is going on for a very long time and that it is quite likely that the age of the earth is of the same order as the age of the universe which is only a few thousand million years.⁴⁸ However, it is recognized by most of the contemporary astrophysicists that the universe is expanding.

Eddington developed the theory of the expanding universe at some length. He also accepted the conclusions of the theory of relativity for developing his view of space and time. In agreement with Einstein Eddington pointed out that there was close affinity between matter and space. According to Eddington, there is curvature of space-time even where there is no recognized matter or electro-magnetic field; and hence, mass, momentum and stress must be ascribed to a region in space-time.⁴⁹ It is impossible to think of space-time without its accompanying mass and momentum. There can be no space without things occupying it and there can be no things without space. Hence, the conception of vacuum or thingless space offers a hindrance to the conception of a universe from the standpoint of physics.⁵⁰ Space is

47 'The Problem of the Expanding Universe', *Science in Progress*, Third Series, p. 34.

48 Jones, H. S., *General Astronomy*, London, Edward Arnold, 1956, p. 433.

49 *New Pathways of Science*, p. 47.

50 *Op. Cit.*, pp. 48-9.

not infinite and endless, but it is finite and closed. However, in spite of its finiteness space has no precise volume since it is continuously expanding. Space is getting inflated like a rubber balloon. Matter of the universe was in a state of equilibrium aeons of years ago. At that time the dimension of the universe was much diminutive in comparison to its volume. But owing to inherent instability of the cosmic equilibrium the scattering of matter began and the universe went on expanding indefinitely. It is evident, then, that space expands with the expansion of the universe. But when the expansion of the universe reaches its maximum limit the bubble of space bursts and the world is again restored to its original state of equilibrium.

According to Eddington, Space and time cannot be separated from each other, but they are so closely mingled up with each other that they may be called events or point events. A point at a given time and place is called an 'event'.⁵¹ The aggregate of all point events is the 'world'.⁵² The real nature of space is unknown and indefinable. However, owing to a strong idealistic bias Eddington believed that events were already realized in the Universal Mind or Logos. Hence, events do not happen; they are just there in Nature and we come across them.⁵³

Eddington's view of space-time is more vulnerable than that of Einstein. Einstein's view of space-time is free from serious criticisms because he keeps his theory within the bounds of science and seldom takes a speculative jump into the region of philosophy. Eddington, on the other hand, made frequent excursions into the realm of metaphysics and very often fell into the pitfalls of idealism. Eddington's definition of point-events does not seem to be satisfactory. He treated them as mysterious entities. He regarded them as already realized. Such a view gives us an idea of static reality, and hence, such events should not be called events at all for they do not actually occur in Nature. The conception of eternally realized events does not seem to be sound for it denies the reality of change which is accepted as

⁵¹ *Space, Time and Gravitation*, p. 45.

⁵² *Op. Cit.*, p. 186.

⁵³ *Op. Cit.*, p. 51.

a scientifically established fact. Eddington's theory of expanding universe does not seem to be compatible with his doctrine of eternally realized events in Nature for the two aspects of his theory seem to operate according to two contradictory principles. Finally, Eddington's conception of the expansion of the universe followed by its subsequent contraction does not seem to be satisfactory for such a view gives us an idea of mechanical or cyclical change which is at present considered to be an outmoded idea.

The theory of expanding universe took a very interesting turn in recent times. P. Jordan proposed an interesting theory of 'continuous creation' of matter according to which the total amount of matter in the universe is increasing. Since in his view there is continuous creation of matter in the universe it naturally implies that energy in the universe is also increasing. The hypothesis of continuous creation of matter suggested by P. Jordan was elaborated and worked out in greater detail by H. Bondi, T. Gold and F. Hoyle. We shall briefly discuss Fred Hoyle's theory of continuous creation of matter in some detail.

Fred Hoyle maintained that space was perhaps tightly packed with matter not too long ago prior to the expansion of the universe. In his view, the density of matter which was very great in the beginning progressively became less in density as the universe expanded. The velocity of galaxies increases in proportion to the distance between the receding galaxies. Some of the distant galaxies are receding at a velocity of 200,000,000 miles per hour. It is likely that in about 10,000,000,000 years most of the present galaxies will pass beyond the range of vision of an observer in our galaxy, and yet it is possible that the observer will find almost the same number of galaxies at that time as an observer does so at present. Such a thing will be perhaps possible because new galaxies will be formed out of the background material and thus occupy those regions of space which were formerly occupied by the older galaxies. It may be argued that the material forming background may be completely exhausted at some time in future and at that time there would be no possibility for the condensation of any more galaxies. Hoyle suggested in reply to this possible objection that there was continuous creation of matter so as to maintain a constant density

of the material forming background.⁵⁴ He argued that the universe had an infinite future from the standpoint of the theory of continuous creation of matter.⁵⁵ In his view, the atoms which exist at present did not exist in the past and the atoms which will come into existence in future do not exist at present. There is continuous creation of atoms. Hoyle rejected the view that atoms were created by some arbitrary fiat'.⁵⁶ The doctrine of explosive origin of matter by some arbitrary fiat is unscientific in the sense that it cannot be explained by the laws of physics. Hoyle believed that the theory of continuous creation of matter was quite consistent with the laws of physics. He pointed out that the continuous creation of matter forced the universe to expand and caused a stretching of space.⁵⁷ Consequently, space does not become increasingly fuller with matter. According to Hoyle, the average density of matter in space is constant due to the continuous origin of matter so that there is no possibility of space becoming empty due to the expansion of the universe. This view of constant density of matter in space leads to the conception of a 'steady-state' of the universe. The implication of the theory of continuous origin of matter gives a remarkable balance to the universe in which each atom, each star and each cluster of galaxies had an origin and an evolution, but the universe itself had no origin.⁵⁸ The continuous origin of matter took place from the creation field.⁵⁹ The creation field causes the expansion of the universe.

Hoyle's theory of continuous creation of matter is quite novel and interesting. But his theory is not free from defects. It may be asked: who creates matter? Obviously, Hoyle did not give a satisfactory answer to this question. Moreover, how could Hoyle say that atoms, stars, galaxies and other material systems had origin, but the universe itself had no origin? In this respect Hoyle's view seems to be dogmatic. Hoyle's theory of the universe seems to be highly speculative in its nature.

54 *The Nature of the Universe*, London, Basil Blackwell, 1950, p. 104.

55 *Op. Cit.*, p. 110.

56 *Frontiers of Astronomy*, London, William Heinmann, 1955, p. 313.

57 *Op. Cit.*, p. 319.

58 *Op. Cit.*, p. 321.

59 *Op. Cit.*, p. 343.

Other theories of the universe like those of Einstein, de Sitter, Lemaître and others are also speculative in their nature. There is no conclusive evidence by which it can be shown that any one of these theories of the space-time structure of the universe stated so far is absolutely comprehensive and consistent. We shall try to show in the following few pages that our theory of space-time tallies with Nature in its general features and it is consistent with our theory of reality.

It may be mentioned here at the outset that from the present chapter onwards we shall take a speculative flight into the realm of the empirically unknown and we shall have to depend mainly upon the intuitive method for getting a clear comprehension of the present problem under discussion and other problems that will be discussed in the following chapters. We could give certain positive evidences in support of the conclusions that we arrived in connection with the various problems that we discussed in the previous chapters. We employed both intuitive and empirical methods in arriving at the conclusions concerning the various problems. So far we walked sure-footed on the solid ground, as it were. But now onwards we shall take a speculative flight for we shall have to rely mainly upon the intuitive method. We cannot give any positive evidence for the existence of infinite space-time, God and the Absolute and we cannot also give any concrete evidence for the survival of human personality after the death of its body. Empirical methods so far seem to be ineffective in satisfactorily accounting for such phenomena. Therefore, the conclusions that we shall arrive at in the last four chapters of this work will remain empirically unverified until the various sciences develop new techniques for unravelling the truth concerning the problems that will be discussed in the present and subsequent chapters.

In our view, space and time are the two aspects of the same reality. The actual location of an organization of psycho-physical entities and its field of comprehension represent its spatial aspect and its perennial creative advance represents its temporal aspect. The field of comprehension and the field of creativity constitute the two important features of an organization of psycho-physical entities. The actual location of an organiza-

tion of psycho-physical entities and the values that it creates represents the filled or the occupied space of a system. Filled space is the expression of the conflux of physical aspects of an organization of psycho-physical entities. Time represents the incessant creative activity of an organization of psycho-physical entities. Unfilled space represents the field of comprehension of an organization of psycho-physical entities where the latter creates its values. Filled space is the expression of the physical aspect and unfilled space and time are the expressions of the psychical aspect of a psycho-physical entity or an organization of psycho-physical entities. In other words, filled space is the expression of the Being and unfilled space and time are the expressions of the Becoming aspect of reality. Unfilled space is not static, but it is dynamic because it is the expression of the Becoming aspect of reality. There is contraction as well as expansion of the unfilled space or the field of comprehension of an organization of psycho-physical entities proportional to the clarity and intensity of the latter's creative teleology. The more well-defined is the creative teleology of an organization of psycho-physical entities, the more extensive is its field of comprehension or unfilled space, and the less well-defined is the creative teleology of an organization of psycho-physical entities, the less extensive is its field of comprehension or unfilled space. The unfilled space is dynamic which progressively increases along with the creative advance of an organization of psycho-physical entities and it finally orients itself towards and approximates infinity. There is another important characteristic of unfilled space. There is possibility of confluence of unfilled space of two or more different organizations of psycho-physical entities. In other words, the fields of comprehension or unfilled spaces of two or more organizations of psycho-physical entities may meet and blend. For instance, intimate contact between two or more persons is possible through the conflux of their respective fields of comprehension or unfilled spaces. Conflux of fields of comprehension or unfilled spaces of two or more organizations of psycho-physical entities is the principle of contact between the latter. Unfilled space is like no man's land over which nobody has absolute right. There is another important consequence of

unfilled space. Unfilled space is the principle of differentiation between two or more psycho-physical entities or organizations thereof. Reality is differentiated and structured because of the existence of unfilled space. Filled space, on the other hand, has inertia. Two or more psycho-physical entities or organizations thereof cannot occupy the same region of the filled space for a particular region of filled space excludes the possibility of its being occupied by any other piece of filled space. Filled space is the expression of finiteness. Unfilled space, on the other hand, is the expression of infinity or at least it has the potentiality of infinity. Time is the expression of creativity of an organization of psycho-physical entities. It is identical with the dynamic aspect of reality. Space and time are not independent of each other, but rather they are the two aspects of the same reality. We put a hyphen between space and time and call it 'space-time' simply because the latter is an expression of Being-Becoming or psycho-physical reality. Our theory of space-time is partially corroborated by the theory of relativity. In our view, space-time is real. Filled space has physical properties because it is occupied by the physical aspects and unfilled space and time have psychical properties because they are the expressions of the psychical aspects of an organization of psycho-physical entities.

There is the existence of infinite space-time as well as finite space-times in reality. The Absolute is infinite and eternal. It is infinite in the sense that it has an infinite field of comprehension. The infinite field of comprehension of the Absolute does not terminate anywhere. It is impossible in principle to have a pictorial model of the infinite field of comprehension of the Absolute. Euclid's definition of straight line which can be stretched indefinitely on either side is a most faint and fragmentary approximation to our conception of infinity. Infinite time or eternity of the Absolute is the expression of the latter's perennial creative upsurge. The creativity of the Absolute did not originate at any definite time in the past and it will not terminate at any time in future. The Absolute perennially creates novel and original cosmic values. Its creative activity will never terminate at any time in future because it is supremely creative and romantic. The Absolute is eternal in this sense.

A cosmic value that the Absolute creates once it does not imitate in course of its incessant creative activity at any time in future. Each cosmic value that the Absolute creates is novel and original. The Absolute being a supremely teleological and romantic person it will never create two or more values of exactly the same type at any time for that would amount to renunciation of creativity and degradation to the stage of mediocrity. Cosmic values that the Absolute creates form an unending series. The Absolute's space-time is bound to be infinite-eternal because space will not warp upon itself at any time since it extends unendingly, and likewise time will not return to its original starting point at any time in future for a cosmic value that is once created will never be repeated again.

The Absolute has awareness of its infinite field of comprehension. Its awareness of its infinite field of comprehension is the expression of the maximum possible conflux of psychical aspects of the psycho-physical entities in the organization of the former. It has intuitive apprehension of its cosmic ideas which it actualizes in the form of cosmic values. Its intuitive apprehension of its infinite field of apprehension or cosmic ideas or cosmic values is direct and immediate analogous to Euclidean straight line. Infinity is the expression of the intuitive apprehension of the Absolute. Infinity is the symbol of intuitive apprehension. The intuitive apprehension of the Absolute has the maximum possible velocity. The velocity of light is not the maximum possible velocity that a system may have. Physicists like Einstein and others who propounded the theory of relativity could not conceive of infinity because their conception of matter was incomplete. They did not incorporate the psychical aspect of psycho-physical entities in their conception of matter, and that is the reason why they are confronted with innumerable difficulties in their ultimate analysis of physical phenomena. The behaviour of physical phenomena can be satisfactorily explained if the psychical aspects of psycho-physical entities are taken into consideration while studying the nature of physical phenomena. From our philosophical standpoint there is maximum possible conflux of physical aspects of psycho-physical entities in an atomic system. That is the reason why the mass of the nucleus of an

atomic system is greater than the mass of its electron. The psychical aspects of psycho-physical entities of an atomic system remain on the outer circumference of the latter mostly in the form of electrons which emit photons or light quanta as the most rudimentary form of values. The velocity of light is maximum (it being 300,000 km/sec.) because that is the subtlest form of psychical expression that a physical system can have. Light is the expression of the psychical aspect of an atomic system. It is, therefore, the only physical phenomenon which has the maximum velocity. Moreover, the velocity of light is constant because there is maximum possible conflux of physical aspects in an atomic system and the general pattern or configuration of psycho-physical entities remains almost the same with the result that the rate of emission of light from a physical system has a constant velocity. So far the results of physics are quite accurate and satisfactory in spite of the fact that physicists do not take into account the existence of psychical aspects in matter in their study of physical phenomena. Now the question arises whether the velocity of light is the maximum possible velocity that a system may have in reality. Our answer is definitely in the negative. In our view, the velocity of intuition has the maximum possible velocity that a system may have in reality. The intuition of the Absolute has the maximum possible velocity of all the organizations of psycho-physical entities. The velocities of intuitions of all other organizations of psycho-physical entities other than that of the Absolute are only partial orientations and imperfect approximations towards the absolute criterion of velocity of intuition. From our philosophical standpoint, therefore, the velocity of light is not the maximum possible velocity that a system may have. Even the intuitive apprehension of a highly developed human personality may far exceed the velocity of light. This fact is proved by certain psychical phenomena like clairvoyance, telepathy and the like. An individual with highly developed personality may have intuitive apprehension of an object or an event occurring at a great distance with a much greater velocity than the speed of light. He has direct and immediate intuitive apprehension of an event as it actually occurs. The intuitive apprehension of the

Absolute is the ultimate criterion of maximum possible velocity. The intuitive apprehension of human personalities only faintly and partially approximates the intuitive apprehension of the Absolute.

The intensity and velocity of intuitive apprehension of a human personality depend upon the superjection of creativity which finds expression through the conflux of psychical aspects of psycho-physical entities in the organization of such a personality. The greater is the conflux of psychical aspects of psycho-physical entities in the organization of a personality, the greater are the intensity and velocity of intuitive apprehension. In a highly creative person there is conflux of psychical aspects of psycho-physical entities to a very great extent; hence, his intuitive apprehension has orientation towards infinity even though the former falls short of the latter. In a mediocre person there is only partial conflux of psychical aspects of psycho-physical entities as a result of which the field of apprehension does not generally extend beyond the physical and the social environments. His field of comprehension is generally very narrow and his activities do not extend beyond that range of comprehension. The field of comprehension of a savage is still more narrow than that of a mediocre person and he performs his stereotyped behaviour within the narrow range of his comprehension. The activities of a savage do not constitute an unending series of novel and original values, but rather the former are repeated over and over again in a stereotyped fashion. The personality of a savage is warped by his narrow field of comprehension and his stereotyped behaviour pattern. His field of comprehension does not generally extend beyond the perceptual level. On certain occasions, however, he may have extra-sensory perception even though they are rather rare. The field of comprehension of a simple form of living organism is narrower than that of a savage, and the range of activities of the former is greatly limited particularly by its biological needs. However, since there is partial conflux of psychical aspects alongside the conflux of physical aspects of psycho-physical entities in a simple form of living organism its behaviour pattern is explicitly teleological. In an atomic system there is only

conflux of physical aspects, but there is no conflux of physical aspects of psycho-physical entities in the organization of the former. Consequently, the field of comprehension of an atomic system is much narrower than that of a living organism because there is no conflux of psychical aspects of psycho-physical entities in the organization of the former. The electrons of an atomic system cannot jump about in more than a few orbits. It is evident, then, that the range of activity of an atomic system is limited. It is obvious, therefore, that the more well-defined is the creative teleology of an organization of psycho-physical entities, the greater is the conflux of psychical aspects of psycho-physical entities, and naturally, the greater is the field of comprehension of the former. The field of comprehension of an organization of psycho-physical entities orients itself towards infinity and stretches itself unendingly analogous to the Euclidean straight line when there is sufficient conflux of psychical aspects of psycho-physical entities of such an organization. The extension of the field of comprehension of an organization depends upon its nature of intuitive apprehension. In other words, the framework of space-time of an organization of psycho-physical entities depends upon the nature of its intuitive apprehension. The more intense is the intuitive apprehension of an organization of psycho-physical entities, the wider is its field of comprehension. The field of comprehension of the Absolute is the absolute criterion of infinity. The field of comprehension of organizations of psycho-physical entities other than that of the Absolute may be oriented towards infinity, but their fields of comprehension can never become identical with the field of comprehension of the Absolute for the simple reason that the creative teleology of the former falls short of the creative teleology of the latter. The nature of orientation and partial approximation towards the absolute criterion of infinity depends upon the nature of intuitive apprehension of an organization of psycho-physical entities. The framework of space-time of a system does not merely depend upon its mass. From the standpoint of our philosophical theory we must incorporate intuitive apprehension also along with the mass of a system for reality is not purely physical, but it is psycho-physical in its nature. Intuitive apprehension is the

subtlest expression of the conflux of psychical aspects of psycho-physical entities of an organization. We, therefore, believe that if the symbol of the intensity of intuitive apprehension is incorporated into the equation of the space-time structure of a system the nature of the latter can be studied properly. The defects and inadequacies that are generally found in the theories of cosmology that are arrived at through astrophysics can be remedied through the introduction of the symbol of the intensity of intuitive apprehension in the theory of reality. The introduction of this variable of the intensity of intuitive apprehension will enable us to determine the nature of orientation of a system towards the absolute criterion of infinity. Some form of orientation towards infinity is certainly there in all forms of organizations of psycho-physical entities however trivial and partial it may be. There is partial orientation towards infinity in a physical system in the form of emission of light quanta. Similarly, there is partial orientation towards infinity of a living organism in the form of its behaviour pattern in its perceptual field including its reproductive activity for the perpetuation of its race. Likewise, in a creative personality there is orientation towards infinity in the form of its field of intuitive apprehension and its incessant creative activity in its present life as well as its life after death. However, there is warping of a physical system by its space-time structure because in such a system the variable of the intensity of intuitive apprehension is of the lowest possible degree. But as the intensity of intuition of a system increases the warping of a system by its framework of space-time is gradually counteracted. The field of comprehension of a system increases in proportion to its intensity of intuitive apprehension. In other words, the greater is the intensity of intuition of an organization of psycho-physical entities, the more extensive is its framework of space-time, and the lesser is its intensity of intuition, the more it is warped by its space-time structure.

The nature of space-time structure of an organization of psycho-physical entities can be clearly apprehended through the study of the complexity of a system. The superjection of creativity finds expression through the complexity of an organization of psycho-physical entities and its field of comprehension.

In other words, the more well-defined is the creative teleology of an organization of psycho-physical entities, the more complex is the system and the more extensive is its field of comprehension. The complexity of a system can be observed and experimentally studied. The nature of the intensity of intuition of a system can be inferred on the basis of the experimental observation of the complexity of structure such a system. From this point of view the field of comprehension of an amoeba is wider than that of an atomic system, and the field of comprehension of a creative person is wider than that of an amoeba. Consequently, the framework of the space-time structure of an amoeba is more extensive than that of an atomic system, and the framework of the space-time structure of a creative person is wider than that of an amoeba. That is the reason why the range and complexity of behaviour of a creative person is wider than that of an amoeba and the range and complexity of behaviour of an amoeba is wider than that of an atomic system.

From our philosophical standpoint the conception of infinite space-time is not inconsistent with the conception of finite space-time. In our view finite space-times are incorporated in the infinite space-time and yet the latter transcends the former in the sense that it is not their totality. Infinite space-time is even more than infinite series of finite space-times. Infinite space-time is the field of comprehension and the field of creative activity of the Absolute. The infinite field of comprehension of the Absolute is the expression of its maximum possible conflux of psychical aspects of psycho-physical entities in the organization of the latter. Infinity is the expression of the unfilled space and incessant creative activity of the Absolute. The cosmic values that the Absolute creates are in finite space-times. Each cosmic value has a specific spatial position in the infinite field of comprehension of the Absolute and it has a beginning in time when it is actually created by the Absolute. Once a cosmic value is created by the Absolute it continues to exist in the form of a souvenir. Thus, the Absolute perennially creates cosmic values with their respective frameworks of space-times. Our universe is only one of the innumerable cosmic values which still continues to exist as a souvenir. Creative persons who evolve

out of our world also create values in finite space-times though on a miniature scale compared to the cosmic values of the Absolute. Since each value has a spatial position it occupies and fills space by its existence even though it may have an aura of unfilled space associated with it both within and without the system. It seems, therefore, that the existence of finite space-times cannot be denied and that the existence of finite space-time is not inconsistent with the existence of infinite space-time. There is the possibility of the co-existence of finite space-times alongside the existence of the infinite space-time. The existence of infinite space-time is beyond the scope of complete comprehension of finite personalities as the latter being subject to biological and social necessities do not have the maximum conflux of psychical aspects in the organizations of their psycho-physical entities, and as such their fields of comprehension cannot fully approximate and comprehend the field of comprehension of the Absolute. The existence of infinite space-time has heuristic value for finite personalities who persistently try to comprehend it as clearly and comprehensively as possible. The universe which the contemporary astrophysicists have been so far able to comprehend with a powerful 200 in. reflector at Mt. Palomar observatory is only a finite universe with a dimension of 2,000,000,000 light years.⁶⁰ It is only one of the infinite cosmic values that the Absolute creates. Our universe is finite in relation to the absolute criterion of infinity of the Absolute. Our universe is not identical with the entire reality. It is an admitted fact that our universe is only a finite universe. If that is so, the question immediately arises: what is outside our finite universe?

60 Fath, E. A., *The Elements of Astronomy*, New York, McGraw-Hill Book Co., 1955, p. 340.

CHAPTER X

THE PROBLEM OF PERSONAL IMMORTALITY

The problem of the immortality of the soul was considered to be an important problem by most of the earlier philosophers. However, in modern times the problem is gradually going out of the picture from the domain of philosophy. Nevertheless, most of the theologians still entertain the idea of personal immortality in some form or the other with untiring tenacity. Furthermore, a few theosophists and spiritualists sometimes put forth certain arguments substantiated by certain evidences for the existence of personal immortality. They even sometimes claim that they were able to photograph the apparitions of certain departed persons. Persons with scientific bent of mind generally have disbelief in the claims of spiritualists that they had certain concrete evidences for the existence of personal immortality. Persons with a scientific attitude generally have doubts regarding personal immortality because most of the theories concerning this problem are inconsistent or unsound in principle. We shall try to clear some of the doubts concerning this problem after first examining the views of some of the outstanding writers in this field.

Plato advanced metaphysical arguments for the existence of the soul. According to him, the conception of immortality can be hardly distinguished from the conception of divinity for there is a close kinship between soul and divinity. There is the existence of stable and immutable truth inside the mutable world. The body of a human personality changes, but the soul is unchangeable. The seen and the apparent aspect of a personality changes, but the unseen aspect of it is unchanging.¹ The soul is eternal. It is uncreated and indestructible; and hence, it is capable of surviving the death of its body. The soul substance is immortal because it is divine in its essence. It is indestructible because it is a simple substance without parts. The souls of the

¹ Plato, *Phaedo*, (English translation by Jowett), p. 79.

dead return to life because they are indestructible. What dies must have lived. There is a fixed number of souls; there can be neither any increase nor decrease in the number of the souls.

Plato's view of the immortality of the soul is based on certain dogmas. His conceptions of the simplicity of the soul substance and its indivisibility are based upon crude material analogy; that is, the soul is something simple like an indivisible atom conceived by the ancient philosophers. He believed that the soul was an independent entity which was capable of entering a body and leaving it without itself being affected at all by birth and death of an individual in which it resides. This view does not seem to be sound for a non-material, non-spatial and non-temporal soul cannot be located in a human body. Plato believed that there was a fixed number of souls in reality. Number is a finitizing principle. To finitize a soul is to locate it in space; and spatial location is tantamount to material existence in some form at least. Plato, therefore, cannot strictly speaking employ the concept of 'number' in connection with the description of the souls. Further, Plato's view of the continuance of the same soul through many stages in fixed and unchanging time seems to be illogical.

McTaggart also gave a metaphysical argument for the endless existence of the soul. According to him, the souls have endless existence. He made a distinction between immortality and eternity. In his view, immortality is a term which is applicable only to time, consequently, the selves cannot be regarded as immortal for they do not really exist in time. The selves have eternal existence.² They can be regarded as immortal in the sense that they exist endlessly in future. The immortality of the soul is tantamount to their eternal existence. McTaggart pointed out that immortality implied the existence of the selves prior to this present life and their continuance after death. In his view, immortality implies pre-existence as well as post-existence because the selves have neither beginning nor end. The selves have successive lives because they are eternal. Finite individuals have existence through all times both past and

2 McTaggart, J. E., *The Nature of Existence*, Vol. II, p. 376.

present.³ The same self has many births. This view is called the doctrine of 'the plurality of lives'.⁴ Death is not a haven of rest for a self, but rather it is the starting point for fresh adventures. It is a phase in the continuous progress in the unending life of an individual self. It is a natural and inevitable phase in the life of an individual self analogous to benevolent sleep.⁵

McTaggart's doctrine of the eternal life is open to certain criticisms. The idea of pre-existence implies that a soul existed endlessly in the past. If this view were correct one might ask: why does a soul take different bodies through the different stages of evolution? If a soul were eternally pure, then why did it embody itself in the organism of an imperfect personality? The doctrine of the selection of an imperfect personality for the embodiment of an eternally perfect soul does not seem to be philosophically consistent. Further, according to McTaggart, the self is timeless. Now, how can a timeless self appear in time by breaking itself into several lives and deaths. The idea of the entrance of an eternal soul into a physical organism seems to be inconceivable and it creates difficulties of the body-mind problem. McTaggart pointed out that personal identity and continuity involved memory; in other words, in his view, memory persists in the soul in spite of its many successive lives and deaths. His view seems to be wrong for there is no empirical evidence in support of his thesis. On the contrary, a total lack of memory of previous lives disproves the doctrine of the pre-existence of the soul. Finally, McTaggart's assertion that the rebirth of an endless soul is necessary to break the dull monotony of a single life is merely an apologetic argument.⁶ Rebirth for the sake of rebirth seems to be a meaningless doctrine.

While Plato and McTaggart gave ontological arguments for the immortality of the soul, Kant gave an ethical argument for it. According to Kant, the idea of the immortality of the soul

³ McTaggart, J. E., *Some Dogmas of Religion*, p. 115.

⁴ McTaggart, J. E., *The Nature of Existence*, Vol. II, p. 383.

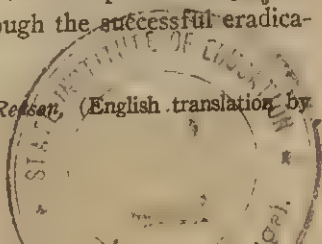
⁵ McTaggart, J. E., *Some Dogmas of Religion*, pp. 138-9.

⁶ *Op. Cit.*, p. 138.

is a postulate of morality.⁷ The moral law commands an individual to do his duty for the sake of duty. An individual ought to follow the categorical imperative of reason, and eradicate all his instincts, impulses and feelings from his personality. An individual can realize virtue by willing rightly and by doing his duty for the sake of duty, and the supreme good consists in the harmony between virtue and happiness. Virtue can be realized through unconditional obedience to the practical reason. But an individual cannot get happiness by his own efforts. God rewards the virtue of a finite individual with happiness. The realization of the complete good is the ethical end of finite individuals. They can realize the moral ideal in immortal life for in immortal life they will be able to eradicate their impulses, feelings and the like completely. Immortality of the soul is one of the prerequisites for the realization of the ideal of complete good.

Kant's moral argument for the immortality of the soul involves certain inconsistencies. He maintained that the continuance of moral life was possible, if the conflict between reason and sensibility persisted, and that the greater was the intensity of the conflict between reason and sensibility, the greater was the merit of an action. But at the same time Kant maintained that sensibility must be overcome in order to realize the complete good. Here lies the contradiction in Kant's theory. If the struggle between reason and sensibility continues endlessly, then an individual can never attain the ideal of complete good; and consequently, his virtue can never be adequately rewarded with happiness and the ethical end will for ever remain unrealized. But, on the other hand, if an individual realizes the ideal of complete good and his virtue is rewarded with happiness, he will cease to have immortal life. It follows, therefore, that an individual must cease to be immortal after the realization of the moral ideal. If it is taken for granted that an individual persists in the same manner as it did on earth, then the most vicious persons may become immortal and the virtuous persons may cease to continue in due course of time through the successful eradica-

7 Kant, I., *The Critique of Practical Reason*, (English translation by Abott), pp. 218-19.



tion of their sensibilities from their personalities. In other words, it is likely that virtuous persons may very soon cease to continue because they may be able to subjugate their sensibilities in a comparatively shorter duration of time, whereas the most vicious persons may continue to live endlessly due to their perpetual conflict between sensibility and conscience. But such a possibility would negate the very purpose of personal immortality. Moreover, if an individual ceases to exist after the realization of virtue, how will he be able to enjoy happiness which is the supreme reward of his moral achievement? But even if he continues to exist in some form, he will not be able to enjoy happiness for in his perfectly virtuous life he will be completely devoid of sensibility and feeling. It seems, therefore, that Kant's doctrine of complete good in which there is perfect harmony between virtue and happiness in immortal life involves a contradiction.

James Ward also advanced a moral argument for the immortality of the soul. He maintained that there was continuity of the soul together with its body and its environment. In his view, there are infinite potentialities in finite individuals which they cannot realize in their present lives. Finite individuals who are not able to realize their ideals in their present lives will get an opportunity of realizing them in their immortal lives. Ward maintained that memory also continued with the persisting soul.⁸

Ward's view of personal immortality seems to be wrong. It is inconceivable how a personality survives after its death together with its organism and its environment. A human personality is not like a mythical phoenix which is reborn out of its own ashes after its death. The organism of a human personality disintegrates after its death. The continuance of the organism of a human personality after the death of the latter is impossible for there is no evidence in support of this view. If it is argued that a surviving soul enters the organism of some other person, then such a view gives us the idea of rebirth which can be justified neither on scientific nor on philosophical grounds. It is also doubtful whether the same organism persists together with the surviving soul of a human personality. Integration of organic

⁸ *The Realm of Ends*, p. 395.

particles does not take place soon after the death of a human personality. On the contrary, it is a known fact that disintegration of an organism starts soon after the death of a human personality. Likewise there is no evidence in support of Ward's view that the same environment continues along with the surviving soul. Such a view would imply that a soul returns to the same place over and over again along with its organism. Such a view does not seem to be philosophically consistent.

Brahm advanced moral as well as religious arguments for the immortality of the soul. In agreement with Kant Brahm maintained that the conception of immortality of the human soul was an ethical necessity for it helped human personalities to organize their experiences.⁹ In his view, an individual directs his life towards the realization of the ideals of goodness and completeness. He referred to the Christian doctrine and stated that finite individuals were immortal for the loving God did not allow them to perish. According to him, God sustains the immortality of souls who holds the latter in His universal embrace.¹⁰ Finite individuals who attain the completeness of their personalities are treated justly by God. Immortality of the soul is due to divine grace.

Brahm's ethico-religious arguments for the immortality of the soul seems to be unsatisfactory. It seems that morality has primarily social significance. It does not seem to have any direct trans-empirical significance. There seems to be no sense in holding that the soul is immortal because it has to realize the moral ideal in an endless life. Brahm maintained that the conception of completion and justice were reconciled in immortal life.¹¹ Evidently, Brahm's view suffers from the same defects that are found in Kant's view. The notion of justice seems to have significance only with reference to human society. It is doubtful whether the conception of justice has any significance with reference to supra-mundane region. Moreover, the conception of God as the sustainer of souls and the idea of divine justice seem to be anthropomorphic beliefs.

⁹ *Personality and Immortality in Post-Kantian Thought*, p. 237.

¹⁰ *Op. Cit.*, p. 243.

¹¹ *Op. Cit.*, p. 238.

Schiller advanced a pragmatic argument for the immortality of the soul. According to him, the belief in the immortality of the soul engenders in us a feeling that the present life is not a fleeting and senseless play of feverish appetites, but it is aimed at an ideal which would prove to be an inexhaustable source of abiding peace hereafter.¹² In his view, it is better to adopt the middle path between the two extremes of the maddening fear of death, on the one hand, and the intoxication of unwarranted hopes of the future bliss, on the other. It is, however, true that the idea of future life increases the significance of the present life.¹³ Finite selves are not merged in the universal soul, but, on the contrary, they retain their personal identities even after death. Immortality of the soul must involve some kind of persistence of the 'I' together with consciousness and thought of the self of this life in the life of the self hereafter.¹⁴ The self-identity of the persisting self depends upon memory. Memory is the connecting link between present life and the future.¹⁵ Personal immortality is possible only if there is plurality of selves in reality. There is no room for personal immortality in those philosophical theories which support Absolute Monism. The selves are immortal because they are self-existent, uncreated and uncaused.¹⁶

Schiller's view of personal immortality is open to certain criticisms. He maintained that there was persistence of memory of the past life in the present life. There is no authentic evidence of the fact that the soul existed in the past prior to the present life and the fact that we do not have recollection of our past lives which clearly indicates that the soul did not have pre-existence prior to this life. If it is argued that a soul existed eternally there would be no necessity of its getting embodied in a particular personality. Besides this, Schiller did not specifically mention anything about the purpose of the immortality of the soul. He merely pointed out that belief in immortality

12 Schiller, F.C.S., *Riddles of the Sphinx*, p. 366.

13 Schiller, F.C.S., *Humanism*, p. 257.

14 Schiller, F.C.S., *Riddles of the Sphinx*, p. 384.

15 *Op. Cit.*, p. 385.

16 *Op. Cit.*, pp. 387-8.

of the soul gave significance to the present life and engendered the hope of lasting peace in the world. He did not fully work out his theory of immortality of the soul and he could justify his position neither on philosophical nor on scientific grounds.

Galloway advanced religious and axiological arguments for the immortality of the soul. According to him, self-consciousness is the link which binds the present life with lives in the past and the future. The self carries with it the idea of values in its memory and tries to realize them in immortal life.¹⁷ Galloway upheld two important classical arguments for the immortality of the soul, viz., the claim of the soul for justice in immortal life and the fulfilment of the ethical ideal in eternal life. He pointed out that the moral argument for the immortality of the soul was not a logical deduction but a claim and a demand.¹⁸ Besides this, Galloway advanced a religious argument for the immortality of the soul. According to him, an argument can be advanced in favour of the immortality of the soul on the ground that there is rational justice in the supre-mundane world.¹⁹ God works for righteousness.²⁰ Finite individuals aim at the realization of the supreme value which is nothing but God Himself. Galloway opposed the idea of Absolute Monism because it leaves no room for personal immortality.

Galloway's view is open to the same criticisms that have been pointed out against the ethico-religious arguments for the immortality of the soul. The array of arguments for the immortality of the soul that he advanced were based upon wishful thinking. He maintained that the moral argument for the immortality of the soul was not a logical deduction, but rather a positive demand. This dogmatic statement of Galloway is the expression of his wishful thinking. Further, Galloway's conception of righteous God is the expression of his anthropomorphic belief. The idea of justice and righteousness which are essentially human values cannot be applied to God. Galloway maintained that the will of God worked through human personali-

17 *The Idea of Immortality*, p. 24.

18 *Op. Cit.*, p. 151.

19 *Op. Cit.*, pp. 196-7.

20 *Op. Cit.*, p. 196.

ties. In his view, there is the divine guidance behind the activities of finite personalities.²¹ In his view, finite personalities are treated as mere puppets in the world-drama of God. If finite individuals are the media through which God's will works, then the latter can be hardly regarded as free individuals. It would be degrading God from His exalted position if it is said that the will of God works through finite personalities. Galloway's doctrine of the immortality of the soul, therefore, seems to be philosophically unsatisfactory.

Pringle-Pattison also gave an axiological argument for the immortality of the soul. He maintained that values had no significance apart from the experiencing selves. According to him, values are eternally realized in the mind of God. God is the embodiment of all values. Finite selves themselves are values in relation to God. They must relinquish their hedonistic desires for the sake of attaining immortality. The universe appears to be a sorry scheme to hedonists because the former does not operate according to hedonistic principles.²² Finite individuals should try to realize the eternal values instead of seeking momentary pleasures of life. The idea of immortality can have no religious significance, if the former is alienated from the idea of eternal life as a realized possession.²³

Pringle-Pattison's doctrine of the immortality of the soul is full of confusions. Sometimes he maintained that God was the embodiment of values. Sometimes he identified Him with value itself.²⁴ Sometimes he maintained that values were eternally realized in the mind of God. Sometimes he maintained that finite individuals themselves were values in relation to God. In that case it would imply that finite individuals were already realized in the mind of God, and in that case it would present a static picture of reality. If values are already realized in the mind of God, then why does he create the universe and the finite individuals? Moreover, if finite individuals are nothing but the realized values in the mind of God, then what is the use of

²¹ *Op. Cit.*, p. 203.

²² Pringle-Pattison, A.S., *The Ideal of Immortality*, p. 192.

²³ *Op. Cit.*, p. 205.

²⁴ *Op. Cit.*, p. 190.

their creative activities? Pringle-Pattison's view seems to be philosophically unsatisfactory when he tried to identify value with God Himself. Personality is the creator of values, it is not identical with them. Finally, it is not quite clear why Pringle-Pattison looked askance at the hedonic values. The hedonic values seems to have an important place in life, and in fact, such values give a strong incentive for action in life.

Whitehead advanced a metaphysical argument for immortality. In his view, actual entities perpetually perish subjectively, but they attain objective immortality. Descartes emphasized the dualism of matter and mind. Whitehead, on the other hand, maintained that actual entity had a mental pole as well as a physical pole. He recognized the importance of both the mental and the physical aspects in actual entities. However, he emphasized the psychical aspect of an actual entity in the sense that the latter was, after all, a unity of subjective experience. The objective aspect of an actual entity, according to Whitehead, is also important in the sense that the subject is derived from the object. The subject and the object are not mutually independent and exclusive of each other, but rather they merge in each other in such a way that they may legitimately be called the two aspects of the same fundamental reality. There is unity of the body and the environment as well as body and the soul in the same personality.²⁵ An actual entity is analogous to a human personality. It acquires objective immortality when its subjective immediacy is lost.²⁶ It is the essence of the momentary subject to pass into objective immortality.²⁷ The mental experience passes into the objective order. The operation of mentality is for objectification. Experience is incessant activity which merges in the future.²⁸ Objectification is the mode in which the potentiality of an actual entity is realized in another actual entity. In the process of self-creation a preceding actual-entity is the objectification for the succeeding actual occasion. It is in this way the actual entities experience their objective immorta-

25 Whitehead, A. N., *Nature and Life*, p. 38.

26 Whitehead, A. N., *Process and Reality*, p. 44.

27 Whitehead, A. N., *Adventures of Ideas*, p. 248.

28 Whitehead, A. N., *Nature and Life*, p. 46.

lity. The past is the dead fact. The superject is the outcome of the past. The soul is the nexus of the personal order. It has parasitical existence from moment to moment. Inheritance is the key to personal order. There is sustained mental inheritance in a soul. A soul is not permanent, but it is identical with momentary decisions. In other words, a personality is nothing but a series of momentary and perishing impressions. Whitehead gave a slightly different view of immortality in his *Essays in Science and Philosophy*. In this work he maintained that a value persisted in the universe. In his view, value is timeless and immortal in its nature. It is not tied down to the present, but rather it transcends the immediacy of the historic fact. Values cannot be separated from activity, but rather they are realized through activity. Value preserves its immortality through its impact upon the process of creation.²⁹ There is a co-ordination between the world of activity and the world of value. The world of activity manifests itself through finite acts, and values are co-ordinated into a unity. Each transitory occasion may acquire personal identity. Each personal sequence produces the capacity in its members to sustain the identity of value through which it maintains its own essential immortality.³⁰ Personal identity indicates the stabilizing influence of value in the transitory nature of the world of fact.

Whitehead's view of immortality is open to certain criticisms. He regarded objective immortality as a dead fact. In his view, object is the base out of which the superject emerges like a phoenix out of its ashes and inherits the teleology of its departed antecedent. It appears, therefore, that in Whitehead's view life is sustained by the debris of the dead past. The impressions of the dead past perpetually accumulate in the form of objective immortality. But strictly speaking this is not the meaning of the expression 'personal immortality' as it is commonly understood by such an expression. Actual entities, according to Whitehead, are most transitory. Their birth is their death. If there is no abiding principle in actual entities, how can the succeeding actual entities carry out the sustained purpose of the preceding ones? In

²⁹ Whitehead, A. N., *Essays in Science and Philosophy*, pp. 81-2.

³⁰ *Op. Cit.*, p. 84.

Whitehead's philosophical system there seems to be every possibility of the newly emerging actual entities following their own teleologies since there is nothing abiding and continuous that persists through the perpetually perishing entities. Further, Whitehead maintained that values were immortal since they were timeless. Here also Whitehead's view does not seem to be perfectly sound. It is not necessary that all values should persist perennially. Certain values may get eclipsed and obliterated due to lapse of time. Whitehead's view does not seem to be cogent when he tried to equate value with immortality.

C. D. Broad offered quite a novel interpretation of the persistence of mind. In his view, there is no termination of the constituents of the mind after the death of the body of a person. It is quite possible that a spirit may survive the death of its body for an indefinite time just as the organization of a body persists for some time after death prior to its final disintegration. The constituents of the mind are not destroyed immediately after the destruction of the brain and the nervous system. The constituents of minds may persist indefinitely even if all living organisms and personalities were destroyed.³¹ The constituents of the mind survive the physical death of a person, and they have the capacity for carrying the traces of past experiences and certain personal peculiarities. In other words, memory traces and personal experiences persist in the immortal constituents of the mind even after the physical death of a person. The constituents of the mind float about in the universe like seeds or spores. They seek favourable atmosphere for growing again. Eventually when these constituents of the mind come into contact with the living organisms, they enhance the mental growth of such organisms and even new organisms benefit considerably by the traces of experience left over by the old minds.³² It is, therefore, possible that the constituents of minds which persist after death of persons persist indefinitely and they act as exciting cause in the original production of living organisms from inorganic matter.³³

31 Broad, C. D., *The Mind and Its Place in Nature*, p. 659.

32 *Op. Cit.*, pp. 659-60.

33 *Op. Cit.*, p. 660.

Broad believed that there was a close association between body and mind and that mind had developed with the complexity of living matter through historical development. So far his view seems to convey some sense. But difficulties cropped up in his theory when he discussed the problem of body and mind from the standpoint of a dualistic theory. He believed that mind and body were two independent entities and that the body was 'animated' by the mind. Obviously, Broad advocated a dualistic theory of body and mind. A dualistic theory of body and mind seems to be philosophically inconsistent for such a theory is open to various criticisms and insoluble difficulties. Body and mind cannot be regarded as two distinct entities; but rather they are the two aspects of the same psycho-physical personality. Broad did not mention clearly how these two distinct entities were related or what was the principle that joined them. Moreover, he believed that even though body and mind were generally found in close association with each other, it was possible for certain constituents of the mind to survive after the death of the body. These constituents were pictured by him as floating about in the universe like dormant seeds which grew again whenever they got a favourable environment. Broad's view on this point does not seem to be correct. If the constituents of the mind are not associated with matter, it may be asked: what is their mode of existence? In what form do they exist? Broad did not say anything specifically on these points. He went to the extent of saying that the constituents of the mind carried with them the traces of experiences of their previous minds, and that the new minds that emerged through the association of these mental elements benefited by the traces of experiences that the mental constituents had been carrying during their millions of years' of repose. This argument also does not seem to be sound. How can the memory traces persist in the mental constituents if the latter are absolutely non-material and non-spatial? Broad's doctrine of the survival of the mental constituents is vague. He himself admitted that he knew very little of the nature of the constituents of the mind that survived after the physical death of a person.

In the preceding few pages some of the important philoso-

phical theories of the immortality of the soul were discussed and found to be unsatisfactory for some reasons or the other. We shall make a passing reference to the views of some of the scientific workers who did some research on the problem of personal immortality in a few pages. There is ample literature on psychological investigation of the problem of personal immortality which cannot be exhaustively discussed here.

Sir Oliver Lodge claimed that there was the independent existence of spirits and that their personal immortality was a demonstrated fact. He pointed out that human personality had certain supernormal faculties even during his lifetime. In his view, a person can perceive even without the aid of the sense organs and he can transmit his thoughts to other minds without the aid of any mechanical device. Thought reading is one of the evidences which proves that mind can perceive the ideas and thoughts of others without the aid of any mechanical device. This phenomenon is experienced by many spiritually advanced persons. Such a phenomenon can also be demonstrated by certain experimental methods. Persons can transmit their thoughts to other persons living at a great distance. This phenomenon is known as telepathy. Certain members of savage tribes still possess this telepathic faculty. But civilized persons have lost the ability of transmitting thought to other persons at a great distance since they have other means of communication. Clairvoyance is another phenomenon which proves the existence of the supernormal faculty in the human mind. In clairvoyance an individual can perceive things which are at a distance without the aid of the sense organs. In clairvoyance sealed letters, objects hidden in subterranean streams and the like can be perceived as vividly as in senseous perception. Sometimes events occurring at a distance can be seen in dream or trance. Human mind has the faculty of sensing things at a distance. F. W. H. Myers maintained that telepathy was a kind of feeling at a distance. In his view, human mind has action upon other minds at a distance without the agency of any sense organs.³⁴ Telergy is yet another psychical phenomenon in which the mind of a

34 Myers, F. W. H., *Science and Future Life*, p. 25.

person acts upon body. It is a known fact that mind acts upon its own body, but sometimes it is capable of acting upon other bodies also. Sir Oliver Lodge also testified to the existence of the same phenomenon. He pointed out that under certain conditions even inorganic things could be moved, weights lifted, things carried about and so on.³⁵ Barrett also pointed out that in telergy a table could be made to move or a ball could be sent up into the air and suspended there without any physical aid.³⁶ Members of the Society for Psychical Research did extensive research on supernormal phenomena. According to them, the messages of departed souls can be obtained through planchette writing, table tapping, voice statements of mediums and so on. The soul persists after the death of its body and sometimes it sends message to living human personalities through suitable mediums. Messages have been received from Henry Sidgwick, F. W. H. Myers and many others who have died. Certain spiritualists also claim that sometimes spirits actually appear before some of the mediums. They also claim that photographs of departed spirits have been obtained. Doumette claimed that disembodied spirits watch the activities of their beloved ones. In his view, the disembodied spirits have detailed knowledge of the incidents of their previous lives. These spirits are capable of speaking various languages which are spoken on earth and other regions of the universe.³⁷ In recent times certain experiments were performed under controlled laboratory conditions by William McDougall, J. B. Rhine and others to prove the existence of extra-sensory perceptions. Some of these psychologists and certain other independent workers were able to prove conclusively the existence of extra-sensory perceptions. The existence of some of the extra-sensory perceptions which are proved in recent times under laboratory conditions were most widely known to the people of India ages ago. The existence of extra-sensory perceptions which are considered to be most remarkable and startling by most of the workers in the field of psychical research are considered to be most trivial and com-

³⁵ Lodge. O., *Why I Believe in Personal Immortality*, p. 58.

³⁶ *Psychical Research*, p. 227.

³⁷ *Life After Death*, p. 59.

monplace by the *yogins* of India even to-day for the latter are able to achieve many supernormal powers in the advanced stages of their *yogic* practice which may appear to be unbelievable to anyone who is not fully conversant with the intricacies of *yogic* practices.

There are, however, certain persons who have utter disbelief in the existence of extra-sensory perceptions and survival of the soul after death. Flourney carefully examined some of the demonstrations of extra-sensory perception and explained most of them from the psychological standpoint. He maintained that some of the so-called 'supernormal' phenomena were connected with pathological states of the mind, such as obsession, dissociation, hysteria and the like. Carrington believed that demonstrations of spiritual phenomena were nothing but trickery. He pointed out that being an amateur conjurer himself he could always detect fraud and trickery in the demonstrations of the so-called 'spiritual' or 'psychical' phenomena.³⁸ Münsterberg was also most critical of the so-called 'psychical' phenomena and he re-regarded all affairs of 'psychical research' as fraudulent. Eusapia Palladino was considered to be endowed with super-normal powers and she gave demonstrations of her powers at many places. Münsterberg, however, could find nothing but fraud in the demonstrations of supernormal powers of Eusapia. Leuba also mentioned that Eusapia used frauds of various types in order to dupe credulous people. For instance, Eusapia used to give demonstrations of her supernormal powers in especially arranged rooms with very dim light or no light at all. A flash light photo which was taken without her knowledge during one of the sittings revealed that Eusapia was lifting the table with her feet which she declared was being raised by a spirit. Most people who observed Eusapia carefully found that cheating and trickery were the conspicuous features of her performances.

Theodore Flourney gave certain arguments against the possibility of survival of the soul after the death of a person and extra-sensory perceptions. In his view, so far no message is received from a departed soul which is fool-proof and authentic.

38 *Eusapia Palladino and Her Phenomena*, p. 154.

Messages that 'mediums' record are not messages from the departed souls; but rather they are the expressions of the former's own minds. They are the expressions of a particular medium's own memory. Sometimes certain mediums dupe themselves by confusing their imagination with reality. Some of the so-called supernormal phenomena exhibited by mediums are nothing but the expressions of pathological mental conditions, such as automatisms, hallucinations etc. Very often emotional complexes are objectified and mediums can actually visualize apparitions of departed persons. Some of the messages from the so-called departed souls are revealed by mediums in their delirium-like states. It is also observed that mediums are generally paranoiacs and they undergo 'systematized insanity' in order to give expression to some of the so-called supernormal phenomena.³⁹ Flourney, therefore, denied the possibility of the immortality of the soul and regarded the so-called extra-sensory perceptions as the expressions of the pathological conditions of the mind.⁴⁰

Leuba also gave psychological analysis of the so-called 'spiritual' phenomena. In his view, some of the spiritual phenomena can be explained as the hallucinations of the subject. For instance, many religious people actually visualize Jesus Christ in persons. This can be explained as a hallucinatory experience. Sometimes certain persons have visions during their waking life due to pathological conditions of their minds. Most of such visions are the expressions of a person's most fond wishes. For instance, the Jews sometimes actually visualize the presence of God and they dream of the Day of Yahwey, and they believe that the kingdom of peace and plenty would be established on earth. The ideas of the Day of Yahwey and the resurrection of the dead spring from the belief in the insufficiency of this life and to satisfy fully the instinct of self-preservation.⁴¹

The psychological explanations of the belief in immortality of the soul and paranormal phenomena are not entirely un-

³⁹ *Spiritism and Psychology*, (English translation by H. Carrington). pp. 306-14.

⁴⁰ *Op. Cit.*, p. 309.

⁴¹ Leuba, J. H., *The Belief in God and Immortality*, p. 105.

founded. Psychologists and other scholars with critical attitude have every right to doubt the possibility of immortality because so far there is not a single satisfactory theory of personal immortality which is theoretically consistent and intelligible. They legitimately doubt the survival of the soul after the death of a person for it is unintelligible how a completely non-physical soul continues to exist after the termination of the body. Moreover, it cannot be denied that many persons practise trickery and fraud in the name of 'psychical research'. It is sometimes very difficult to distinguish between genuine research workers and fraudulent persons who investigate the problems of personal immortality and extra-sensory phenomena. We believe that many of the doubts and misunderstandings concerning the problems of personal immortality and extra-sensory perceptions will be removed if there are satisfactory and consistent theoretical foundations for the possible existence of these phenomena, and if they are understood from the right perspective.

We critically examined some of the outstanding theories of personal immortality and we found them to be unsatisfactory. It is generally believed by philosophers and theologians that body and soul are independent realities which are somehow associated in human personality. It is also believed that a soul survives after a person dies. It is sometimes also believed, particularly by the Hindus, that a soul re-enters a body and undergoes rebirth. This is the Hindu doctrine of transmigration. In our view, a dualistic conception of body and mind is philosophically unsound. What is the cementing factor which brings about the conjunction between body and mind? Moreover, a theory which supports the dualism of body and mind cannot satisfactorily explain how a soul persists after its dissociation from its body. It may be asked: What is the mode of existence of a disembodied soul? Does a disembodied soul exist in space? If it exists in space, does it have any precise spatial location? Can a non-material soul have location in space? If it can, have a location in space in what way is it different from physical phenomena? If, on the other hand, it transcends space, what is its mode of existence? How can a non-material soul once liberated from a particular human body re-enter another body,

undergo rebirth, and assume the rôle of another person? At what stage of maturity of a body does a soul make its entry into the latter? What is the criterion by which it can be determined whether a soul has entered a particular body or not? Theories which support the dualism of body and mind cannot give satisfactory answers to these questions.

Our view is free from these possible objections. In our view, human personality is a dynamic organization of psycho-physical entities. Physical and psychical aspects of a human personality are not independent realities, but rather they are the two aspects of an organization of psycho-physical entities. A psycho-physical entity has both physical and psychical aspects which are mutually inseparable. Psycho-physical entities are the ultimate constituents of all physical, living, and mental phenomena. In physical phenomena there is maximum conflux of physical aspects of psycho-physical entities; in a simple form of living organism there is a partial conflux of psychical aspects though the conflux of physical aspects of psycho-physical entities still predominates; and in mental phenomena there is sufficient conflux of psychical aspects of psycho-physical entities. In a human personality there are two different types of confluxes of psycho-physical entities producing thereby a marked distinction which is popularly known as the distinction between 'body' and 'mind'. That aspect of a human personality which has the maximum conflux of physical aspects is popularly known as the 'body', and that aspect of the personality which has the maximum conflux of psychical aspects of psycho-physical entities is popularly known as the 'mind' and in our terminology 'the governing law' of personality. It must not be understood, however, that the physical aspect of human personality is purely physical and that its mental aspect is purely psychical. The physical aspect of human personality has also psychical aspects, but only there is no major conflux of psychical aspects of psycho-physical entities of the former. Likewise 'mental' aspect or the governing law of human personality includes physical aspects, but only there is no major conflux of physical aspects of psycho-physical entities of the former. Hence, from our philosophical standpoint there is no such thing as pure matter or pure mind.

The concept of pure mind or soul or spirit which is very often found in philosophical literature seems to be a meaningless construct. The psychical aspect of human personality has a subtle physical form which may be called the 'subtle body' of a human personality. The gross body of a human personality decays and perishes after death, but the 'subtle body' of the latter survives for sometime or even endlessly. The 'subtle body' of a personality has extra-sensory perceptions. It may make use of extra-sensory perceptions both when it is associated with its 'gross body' and when it is dissociated from the latter. A large number of experiments were performed by members of the Society for Psychical Research, independent psychologists and similar other workers who have demonstrated that certain living persons have the capacity for observing events which occur at a great distance, hearing sounds from a great distance, understanding thoughts of persons at a great distance and so on. There are certain persons who have the capacity for intuitive comprehension even without the aid of sense organs. In such persons there is sufficient conflux of psychical aspects of psychophysical entities. The more well-defined is the creative teleology of a person the greater are the possibilities in him of clearer and wider comprehension of himself and his environment through extra-sensory perception or direct intuitive apprehension. The more well-defined is the creative teleology of a person, the greater are the possibilities of conflux of psychical aspects of psychophysical entities. The creative teleology of a person persists even after the termination of its gross body together with its conflux of psychical aspects and configuration of physical aspects of its psycho-physical entities during its state of immortal existence. Those aspects of creative teleology which remain unexpressed during the state of human existence of a person are expressed in future states of existence after the termination of his gross body in certain environments other than the terrestrial environment. The superjection of creativity persists indefinitely on the personal plane if the creative teleology of a person is sufficiently well-defined. The more well-defined is the creative teleology of a person, the greater is the possibility of his personal immortality. The superjection of creativity is the principle of

immortality. It is the principle of continuity of an organization of psycho-physical entities.

Our philosophical theory rules out the possibility of the doctrines of momentariness as it is exemplified by the philosophical theories of the Buddhists, Hume, Whitehead and many others. The doctrine of momentariness is tenable neither on scientific nor on philosophical grounds. There are no momentary phenomena in reality. There are, however, certain things like certain types of sub-atomic particles which have a very short duration of existence. But the entire reality is not made up of such short lasting phenomena. Most phenomena of our universe and particularly of the planet earth are relatively stable, permanent and continuous. Most phenomena of our world seem to have orientation towards infinity and eternity of the Absolute. Atomic systems of our planet have orientations towards infinity through radiation of light quanta that the former emit. Atomic systems of our planet have relatively stable and continuous existence. However, atoms inside stars do not have stable and continuous existence due to high temperature in the latter. Inside the stars there is continuous collision of atoms with X-ray waves and between sub-atomic particles themselves as a result of which electrons are broken off and set free from their respective atoms.⁴² The freedom and the state of isolation of electrons from their respective atomic systems are only temporary for they are soon captured by mutilated atoms which are nearest to the former. We pointed out in earlier chapters that minor and imperfect conflux of psychical aspects of psycho-physical entities in an atom is mostly there in electrons which give teleological directions to an atom. Other scientific explanations apart the mutilated atoms frantically search for electrons because it is from the latter that they would get their teleological orientations. In stars most of the atoms are in ionized states in which electrons are broken off and separated from their respective atoms. Nevertheless, in spite of great hustle and bustle of atoms and electrons inside the stars they never get anywhere except for change of places: and

⁴² Eddington, A. S., *Stars and Atoms*, Oxford, Clarendon Press, 1929, p. 17.

hence, there is no outward progress of atoms.⁴³ The lack of progress of atomic systems in stars is due to the fact that they are in ionized states and as such atoms do not get any teleological orientations. Most atoms of the planet earth are in stable and unmutilated forms compared to atoms in stars.⁴⁴ Atoms combine with one another in accordance with the laws of chemical combination. They attain stable configurations through chemical combination and form molecules. According to Rutherford-Bohr theory, chemical interaction between atoms involves the sharing of outer shells of electrons.⁴⁵ It was suggested by G. N. Lewis earlier that there was the sharing of electrons between atoms during chemical interaction.⁴⁶ The chemical properties of an element are determined by the number and arrangement of electrons in the outer shells of their respective atoms. According to the modern theory, valence bonds may be established between atoms either through transference of valence electrons from one atom to another or through sharing of electrons between atoms.⁴⁷ It may be noted here that the chemical combination between atoms is possible through the interaction of electrons which from our philosophical standpoint represent the minor and imperfect conflux of psychical aspects of psycho-physical entities of atomic systems. Atoms combine according to laws of chemical combination and form molecules. Material molecules may pass from one state to another under certain conditions. For instance, material molecules may pass from gaseous state to liquid state and from liquid state to solid state. The nature of material molecules depends upon the number and valence bonds of the constituent atoms. Atoms retain their independent identities so long as they are not ionized or conjoined with other atoms through valence bonds. From our philosophical standpoint, therefore, atoms have intermittent immortality in the sense that they attain their com-

43 *Op. Cit.*, pp. 26-7.

44 *Op. Cit.*, p. 16.

45 Praag, G. V., *Physical Chemistry*, Cambridge, University Press, 1950, p. 82.

46 Pauling, L., *The Nature of Chemical Bond*, London, Oxford University Press, 1950, p. 2.

47 Gucker, F. T. and Meldrum, W. B., *Physical Chemistry*, New York, American Book Co., 1950, p. 66.

pletely unmutated and independent states of existence only interdependently. Living organisms have more satisfactory devices of continued existence than material atoms. They have the potentiality of perpetuating themselves through the principle of heredity. They have racial immortality. Simpler forms of living organisms, such as protozoa or unicellular organisms reproduce themselves through direct asexual reproduction. They reproduce themselves through self-division or fission. The racial immortality of the protozoa is of the linear order. Metazoa or multicellular organisms reproduce themselves sexually through the fusion of male and female germ cells into a zygote. Their racial immortality is of the reticulated pattern. Human personalities alone of all living organisms on earth have the potentiality for both racial immortality and personal immortality.

Human personalities may attain immortality in two different ways. One of the ways through which human personalities may attain immortality is through the principle of heredity. Immortality which human personalities attain through the principle of heredity is not personal immortality, but it is racial immortality. The immortality of the human race is achieved through sexual reproduction in which there is major conflux of physical aspects and partial conflux of psychical aspects of psycho-physical entities of two mutually fusing parental germ cells into a zygote. The superjections of creativity of parental germ cells ingress into a zygote whereby the potentiality of creative teleology of the new cell is enhanced. In other words, through sexual reproduction there is conflux of creativity of two parental germ cells whereby the creative teleology of the new cell becomes more well-defined than the creative teleologies of the two independent parental germ cells. It is on this ground that we can account for the progressive cultural development of the human race. There are, of course, certain individuals of succeeding generations of the human race who do not utilize their well-defined teleological principles for creative ends. Such persons either allow their potential creative teleologies to get wasted away through disuse or misdirect their potential creative teleologies towards destructive ends. However, in spite of such anomalies human race as a whole is certainly progressing culturally down the ages.

Individuals of human race aim at the procreation of physically, ethically, æsthetically and intellectually best generations. Racial or collective teleology finds expression through various types of subtle and intricate biological, psychological and cultural laws. Individuals of human race generally select the members of their opposite sexes in accordance with these laws through the operation of which the best specimens of the species are brought into existence. Certain conditions are created through racial immortality through the operation of which the best members of the race are brought into existence. Certain favourable conditions are created through racial immortality under which human individuals are able to develop their personalities to the fullest possible extent. Racial immortality prepares the way for personal immortality. It would be very difficult for any person to achieve personal immortality without a rich biological, psychological and cultural heritage of the entire human race. Racial immortality is the necessary pre-requisite for personal immortality.

Personal immortality is the finest achievement that a human personality may attain through his own efforts. It is the supreme and the final end for the attainment of which highly creative persons most poignantly wish. One's existence in human society is a sort of preparation for the final achievement of personal immortality. The creative teleology of a person becomes well-defined through his creative activities in his terrestrial environment. There is progressive enhancement of the intuitive apprehension of reality in a person through his incessant creative activities. The creativity of a human personality is of an inferior order compared to the creativity of an immortal person and inferior beyond comparison to the creativity of the Absolute. There are certain aspects of mediocrity even in the most creative human personality which the latter find most difficult to avoid. Very often a creative person repeats his values with slight shades of differences or there are at least certain gaps of uncreative periods between the creation of one value and another. Moreover, a human personality being conditioned by certain unavoidable biosocial necessities is compelled to perform certain hackneyed and uncreative activities, such as eating, drinking, sleeping, struggling for existence, maintaining social contacts and so on.

These biosocial activities form the indispensable aspects of human existence. However, the more the creative teleology of a person becomes well-defined, the less importance he attaches to the biological and social necessities of human existence. That is the reason why most of the highly creative persons remain impervious to some of the biological and social needs which have demand upon him. The main interest and attention of a highly creative person remains concentrated for the most time on his creative ends. One of the main advantages of the practice of *yoga* consists in the fact that it enables an individual to develop certain supernormal powers whereby he may cease to be a slave of certain biosocial necessities. Moreover, a person who practises *yoga* has more or less clear comprehension of certain aspects of his own personality and reality through deep and sustained concentration on certain aspects of his basic nature. It may be pointed out, however, that the main defect of the *yoga* method of knowledge consists in the fact it takes cognizance of only the Being aspect of reality and completely ignores to take cognizance of the Becoming aspect of the latter. Nevertheless, it is possible for a person who follows the methods of *yoga* to discriminate between some of the essential and unessential values of human existence. Most religions of the world have the similar function of showing the basic difference between the essential and the unessential values of human existence. They try to impress upon persons that it is only the essential values or basic truths of reality which really matter in human life and that the unessential values can be ignored and discarded without any major detriment to personalities. They also try to impress upon persons the value of concentration on the basic nature of human personality and its relation to reality. In brief, we would like to emphasize once again that certain biological and social necessities have strong and persistent demand upon human personalities and most of them cannot but willingly or unwillingly respond to the former. During immortal existence persons are no longer bothered by biosocial necessities because they are able to transcend their gross bodies as well as their terrestrial environment. Consequently, immortal persons are not affected by biological necessities like hunger, thirst, sex etc., and social necessities like freedom, justice,

recognition etc. They completely transcend the conditions of terrestrial existence.

Most of the creative persons try to utilize their human forms of existence to the best of their abilities. They try to create values of ever increasing subtlety in the course of their creative advance. The more the creative teleology of a person becomes well-defined, the greater is the conflux of psychical aspects of psycho-physical entities in his personality. The greater is the field of comprehension of a person, the greater is the conflux of psychical aspects of psycho-physical entities in his personality. A person may develop extra-sensory perceptions through the conflux of psychical aspects of psycho-physical entities of his personality if the former has the necessity for the development of such a faculty. If, however, such a person does not have the necessity for the development of such a faculty since he has other well-developed methods of observation under his command, the intensity of intuitive apprehension increases in him. The more the intensity of intuitive apprehension increases in a person, the more he acquires the most necessary requirement of personal immortality. A person attaches lesser and lesser importance to his gross body with the progressive increase of his intuitive apprehension. He is more concerned with clear comprehension of the nature of reality and with self-expression than with self-gratification. He may not have positive aversion for hedonic values, but he is not engrossed in them or he does not willfully hanker after them for he raises himself to a higher state of existence through the development of his creative teleology. He knows that hedonic values are not ends in themselves, but that they are only aids to smooth and comfortable living. He realizes that his main purpose is to incessantly create infinite variety of novel and original values. He earnestly tries to realize his supreme aim of creativity during his state of existence in human form. However, his supreme aim of creativity is very often frustrated by unavoidable routine work which he has to perform under some kind of constraint or by innumerable possible distractions that he may have to encounter. There are, however, certain exceptionally fortunate creative persons who have to attend to very few routinized actions or who

have very few distractions. Even such persons cannot fully realize the supreme aim of creativity because the intensity, range and frequency of their creativity is sufficiently hampered by the limitations of their gross bodies and sometimes by uncongenial physical and social environments. Nevertheless, even the most creative persons cannot say that the task of their lives was over and the mission of their lives was fully and completely realized. A creative person is in the most initial stage of his creative adventure during his state of existence in human form. Creative expressions of a creative person during his human form of existence are the first humble and childlike beginnings in the process of his potentially endless creative advance. It is only the human personality which has clear comprehension of its creative teleology after it has passed through thousands of years' of gropings through the evolutionary process for explicit creative expressions. However, persons who are in the aboriginal or mediocre stages of their existence are not clearly conscious of their creative teleologies. They only create utilitarian and pragmatic values and most rarely ethical, æsthetic and intellectual values, and they feel towards the fag ends of their lives that their purpose of existence was almost complete in the sense that they had nothing more to achieve culturally. Most of them believe that there is nothing remarkable to achieve in the state of existence after death, if they at all have belief in personal immortality. They have generally a feeling that their state of existence beyond death would be hazy and bleak or perhaps a state of unbearable agony of separation from the terrestrial environment to which they fast anchored their personalities. Such persons have an extreme fear of death which would forcibly sever them from the terrestrial environment to which they are most passionately attached. Such persons are unfit for personal immortality for they lack the requisite qualifications for willingly and gladly welcoming death in their states of advanced senility and their states of existence after death. Most mediocre persons have an attitude of apathy towards the state of existence after the termination of their gross bodies. Civilized persons are almost on the stepping stone which would lead to culture, but most of them generally tarry on in the plane of civilized state and inhibit

their creative advance whereby they would enter the cultural plane. Most of them anchor their personalities fast to their social environments in which the acme of material progress has been reached through advanced technology and surplus economy. They are dazed, enamoured and infatuated by their tremendous material progress. They feel most reluctant to part with their most treasured material possessions in favour of something ethereal and unknown that they are likely to have in their state of existence after death, if they at all have belief in personal immortality. However, certain civilized persons normally and smoothly advance into the cultural plane and they realize that clear comprehension of reality and incessant creation of infinite variety of novel and original values are of far greater importance than anything else in life. They consider creativity to be the main purpose of their existence. The more the creative teleology of a person becomes well-defined, the more he realizes the possibilities of expressing his values of infinite subtlety and richness. He realizes the versatility of his creative teleology. For instance, a creative person may discover to his utter astonishment that he is not only a physicist, but also a philosopher, a musician, a painter, a literary artist and so on. He may discover that his creativity is many-faced and inexhaustible. He may realize that his existence in human form is just a period of probation for endless creativity in his state of existence after the termination of his gross body. He may not regard death as a dreadful phenomenon, if it does not terminate his human existence prematurely or violently or against his will. Premature death of a person through disease or malnutrition is definitely a loss to the individual himself and to humanity and particularly to the society of which he was a member. Likewise any form of violent death of a person is a loss to the individual himself and to the society of which he was a member. The possibility of developing one's creative teleology is lost through premature or violent death. Medical science and certain allied applied sciences are persistently trying to devise innumerable methods by which premature and accidental death of persons may be avoided. It is quite possible that with the progress of medical science and certain other allied applied sciences the possibilities of premature and accidental death of

persons may be reduced to the minimum possible degree. However, we believe that at no stage sciences will be able to ward off death premanently or till the time one is willing to welcome death cordially. An exceptionally creative person may postpone his death for a very long time till he may be most willing to welcome death cordially for an infinitely better state of existence after death. He has a sufficiently clear intuitive apprehension of the nature of reality and his place in the scheme of existence. He has the ability of *icchāmṛityu* or the ability of invoking death through willful acceptance. There were many *rishis* or supremely wise persons in the past in ancient India who willingly invoked death in this way. There are a few such supremely wise persons even now in India who can invoke death in this way. Such persons die only when they wish to terminate the existence of their gross bodies which have very little or no utility for them. They may keep their gross bodies functioning smoothly and efficiently through *yogic* methods till the last moment of their existence on earth. But since they sufficiently clearly apprehend the nature of the state of existence beyond death which is infinitely subtler and richer than the state of existence on earth, they willingly transform their human personalities into immortal existence by discarding their gross bodies. They discard their gross bodies as naturally and painlessly as trees shed their leaves during autumn. The preponderance of the conflux of psychical aspects over the conflux of physical aspects of psycho-physical entities in the personality of a *rishi* or a supremely wise person enables him to loosen the tie that exists between the gross body and the subtle body. The gross body is the expression of the maximum conflux of physical aspects and the subtle body is the expression of the maximum conflux of psychical aspects of psycho-physical entities in a personality. A *rishi* or a supremely wise person can easily renounce his gross body at will when its utility is almost over because he attaches minimum possible importance to the latter. A creative person may not be able to discard his gross body at will like a *rishi*, but he may have the potentiality of having such a power. However, there is a fundamental difference between the personality of a *rishi* or a *yogin* and a creative person. A *rishi* or a *yogin* is an Indian philosopher

who is the seer mainly of the Being aspect of reality, whereas a creative person has comprehension of both the Being and the Becoming aspects of the basically identical reality. A *rishi* or a *yogin* is content to realize the identity of his fundamental nature with the fundamental nature of reality in its Being aspect through silent meditation or intellectual contemplation. A creative person, on the other hand, who has comprehension of reality both in its existential and creative aspects is conscious of his rôle as an incessant creator of values analogous to the Absolute who perennially creates infinite variety of cosmic values. Consequently, a creative person likes to cling to his gross body till the last days of his existence in human form and tries to create values through human modes of expression. He does not feel the necessity of renouncing his gross body till the last days of his existence in human form because he does not wish to waste the lease of life that is conditioned by the nature of the psycho-physical apparatus in indolence and lethargy. However, he is not generally afraid of death for he tries to accept it calmly when it approaches him and terminates his human existence. In certain cases creative persons may have the feeling that their gross bodies which have become incapacitated through advanced senility function much slowly and imperfectly in response to the directions given by the theological principles of their personalities. During such a state of affairs they are compelled to give up their creative activities and they calmly wait till their human forms of existence are terminated by death. In any case, creative persons have the requisite qualifications for personal immortality for which they sufficiently prepare themselves during their human forms of existence. It is most likely that the modes of expression of creativity during the state of existence after death are of different orders than what they were during human forms of existence. The possibility of this transformation in the modes of expression of creativity during the state of existence after the termination of gross bodies of persons is mainly due to the fact that there is radical transmutation of personalities after the termination of their gross bodies. There is persistence of a personality even after the death of his gross body, if the creative teleology in such a person is sufficiently well-defined. All persons are not

able to acquire the stage of personal immortality. Those persons who have poorly developed creative teleologies are not able to attain the stage of personal immortality. Whatever little teleological principles that persist after the death of such persons may get obliterated and finally annulled in course of time. Likewise persons who orient their teleological principles for destructive ends may persist with their evil and pernicious intentions for a very short duration after the death of their gross bodies and then they get disintegrated and lost to pay the price, as it were, of their sinister designs. It is not implied, however, by the preceding statement that God by His arbitrary divine grace makes somebody immortal if the latter repents for his sins or completely surrenders himself to the former in uncritical obedience and punishes somebody else with complete destruction of his personality for his disbelief in or disobedience of the former. Perhaps arbitrary divine will is not involved in the selection of a particular individual for personal immortality and condemnation of somebody else with complete annihilation of his personality after his death. In our view, a theological interpretation of personal immortality is uncalled for. We explain all phenomena including the phenomenon of personal immortality by their natural causes. The phenomenon of personal immortality is governed by its own natural and self-evident laws. It is not at all necessary to invoke supernatural causes to explain the phenomenon of personal immortality. The nature and duration of personal immortality of an individual is determined by the unity and intensity of his creative teleology. A person with well-defined creative teleology is bound to be immortal on account of his pre-eminently creative nature which cannot be terminated by the death of his gross body. There is superjection of creativity not only on the racial level through the principle of heredity, but it is also there on the personal level which is expressed through incessant creativity both during the state of existence in human form and the state of existence after the termination of the gross body of a person. If there is sufficient conflux of psychical aspects of psycho-physical entities in a personality, the former cannot be annihilated by any physical catastrophe. If, on the other hand, there is partial and inadequate conflux of psychical

aspects of psycho-physical entities in a person it cannot persist for a very long time after the termination of his gross body. Personal immortality of a person with a poorly developed teleological principle is *prima facie* impossible. A person with a poorly developed personality, say, for instance, the personality of an aboriginal or a low grade mediocre person, may have slightly superior status compared to the status of a simple form of living organism. Simple forms of living organisms, as we have already mentioned, have the potentiality of racial immortality, but they have no personal immortality. Likewise persons with poorly developed personalities have the potentiality of racial immortality, but they have very little or no possibility of personal immortality. A creative person works out his personal immortality through his own efforts. He is not only an architect of his own career during his existence in human form, but he also carves out his destiny for his future states of existence after the termination of his gross body. It is most likely that the modes of expression of creativity during the states of existence after the termination of the gross body are of different forms than they are before the termination of the gross body of a person. It is not necessary that an immortal person should give expression to his creative teleology in forms of poetry, painting, music, sculpture, literature and so on in exactly the same forms that he expressed in his human form of existence. An immortal person may consider it *infra dig* to create values in exactly the same forms that he created during his human form of existence for the former being endowed only with subtle body would create values of infinitely subtler forms than the ways in which the latter formerly created his values. The greater is the conflux of psychical aspects of psycho-physical entities in a creative personality, the greater are the possibilities of subtlety and richness in its creation of values. The creation of a value of a subtle form involves lesser amount of motor manipulation than a value of comparatively less subtle form. For instance, an equation of theoretical physics is more subtle in its meaning than the most exquisite statue created by a human personality because the former is the expression of much greater comprehension of an aspect of reality compared to the latter. The values

are oriented towards the realization of biological and utilitarian ends and most rarely towards the realization of creative ends. Most persons of the world even in the twentieth century are still engaged in frantic struggle for survival; and hence, their primary end in life is to aspire for nutritious and wholesome food, decent and adequate clothing and comfortable shelter with modern amenities of living. Those persons of the human race whose biological ends have been sufficiently fulfilled are generally engaged in realizing certain other types of pragmatic and utilitarian ends. The values that they create are as a general rule intellectually, ethically and aesthetically shallow and superficial. Their values are not the expressions of their adequate comprehension of reality. That is the reason why their values do not have universal and lasting appeal, but they have only local and temporary appeal. Most of the values that they create are the expressions of their biosocial needs, and rarely the expressions of their genuine creative teleologies. Most of the persons of the world are so deeply engrossed in the pursuit of biological and utilitarian ends that they have neither any time nor any genuine inclination for the creation of values which will have universal and lasting appeal. Consequently, such persons have very little or nothing to create after the termination of their gross bodies in certain environments which are perhaps very different from the terrestrial environment. They feel like fish out of water in their new environments and they find their human modes of behaviour to be ineffective there, and hence, before long their immortal existence is terminated on account of their poorly developed creative teleologies which are rendered almost ineffective through the termination of their gross bodies. Perhaps such persons remain in the form of proverbial ghosts and apparitions and try to return to their old habitations and haunt them for some time immediately after the termination of their gross bodies. However, since their human modes of behaviour are ineffective in the state of existence after death they get disintegrated before long. Most persons of our world are mortal in the sense that their personal existence is terminated soon after the termination of their gross bodies. There are only a few highly creative persons who have genuine sense of dedication to their creative ends and attain

personal immortality. Their unity and intensity of creative teleologies persist even after the termination of their gross bodies. If they are not bewildered and dazed by their new state of existence after the termination of their gross bodies and their new environments, they have immense possibilities for the creation of novel and original values of infinite varieties with greater subtlety and greater frequency than what they did during their human forms of existence. If immortal persons can adapt themselves to their new state of existence and their new environments, they may have progressively subtler and complexer states of personal immortality and they may virtually continue to exist endlessly. However, in spite of their endless existence they can never surpass the infinity-eternity of the Absolute. They may only have orientations towards the infinity-eternity of the Absolute. They may have endless existence, but not eternal existence. They may not only create values which they intuitively apprehend through their clear comprehension of reality, but they also create values which they intuitively conceive, through their unique originality. They may reveal their novel values particularly to those human personalities who have genuine aspirations for knowledge and sincere inclinations for appreciation of values. They not only reveal their values to human personalities who have disinterested love of knowledge, but they also help the latter at times of great urgency. They have an intermediate status between human personalities and God. The state of existence in the form of personal immortality is the most coveted goal of all creative persons for it is through that mode of existence that the superjection of creativity can be maintained on the personal level.

CHAPTER XI

THE PROBLEM OF GOD

The problem of God has been an important problem in the entire history of philosophy down the ages. Most of the earlier philosophers believed that God was the ground of the entire reality. Certain philosophers believed that God was the creator of the universe. Certain others believed that God was good and gracious. However, certain modern philosophers preferred the term 'Absolute' to the term 'God' to signify the ultimate ground of reality. They had a tendency to avoid the term 'God' because it was very often associated with anthropomorphic associations. But the term 'Absolute' is not always used in the same sense by all philosophers. Very often the term 'Absolute' is regarded as synonymous with reality. Certain philosophers maintain that the Absolute and God are identical. Certain others maintain that God and the Absolute are different from each other. Others maintain that the Absolute is totality of God and finite individuals. Certain philosophers believe that the concept of the Absolute is philosophically superfluous. Certain philosophers believe that God has a finite personality. They have dethroned the long worshipped supreme and autocratic God and made Him a democratic being. Previously it was believed that God was infinite, eternal, perfect, free and so on. It was also believed that God not only foresaw but also predetermined the actions of human beings; hence, finite individuals could act only according to the pre-determined programme of God. Everything in the world was regarded as predetermined by the will of God. Some of the modern philosophers doubted the supreme authority of God. They raised their cry of revolt against the idea of an autocratic God. They maintained that finite individuals had sufficient freedom, and they did not act like puppets in the world-drama of God. According to them, finite individuals carve out their own careers by their own efforts. God has a finite personality with limited powers. He is only a co-worker of finite individuals. His

function is merely to assist finite individuals in their efforts to eradicate evil from the world. We shall briefly discuss in the following few pages the views of some of the philosophers on the problem of God.

Hegel believed that there was no distinction between God and the Absolute. According to him, the Absolute is identical with reality and completely immanent in it. God is just another name for reality. God distinguishes Himself from Himself and becomes an object for Himself.¹ He is the immanent Spirit of the world. Reality is identically through and through. Religion is the self-consciousness of God.² God is the Being who distinguishes Himself from Himself. Finite spirits are the self-differentiations of God. Finite selves know God in the sense that God knows Himself. Religion is the self-manifestation of God. In religious communion God knows himself through the finite spirits. Finite individuals are the self-differentiations of God; they constitute the 'other' in relation to God. God beholds Himself through finite individuals who are nothing but His own self-differentiations.³ Religious experience for finite individuals consists in the process of identification of the former with the pure unity of God.⁴

It seems that Hegel identified all aspects of reality with the process of self-consciousness of God. He believed that God was completely immanent in Nature and did not in any way transcend the latter. He maintained that God marched through Nature and human history. Wallace aptly remarked that Hegel did not make any distinction between the province of philosophy and the province of religion.⁵ In Hegel's view, everything that happens in Nature and human history is the actual working of God. Strictly speaking, therefore, in Hegel's conception of reality there is no room for individuality and freedom of finite personalities. In Hegel's view, religion is not the relation of finite personalities with God, but rather it is the manifestation of God Himself so

1 Hegel, G.W., *Philosophy of Religion*, Vol. II, p. 237.

2 *Op. Cit.*, p. 327.

3 *Op. Cit.*, p. Vol. III, p. 218.

4 *Op. Cit.*, Vol. I, p. 94.

5 *Prolegomena to the Study of Hegel's Philosophy*, p. 293.

that He may realize His nature through His self-consciousness. It appears, then, that religion is the creation of God and that it has primary importance for Him alone. A finite personality as an independent individual seems to have no concern with religion in Hegelian system of reality; and, in fact, to be more precise, a finite personality has no independent reality of its own; it is in fact a passing phase in the process of God's self-realization; it is only a transient aspect in God's dialectic process having no independent individuality of its own. According to Hegel, in religious consciousness the beholder and the beheld are identical and in the process of God's self-realization through His self-consciousness the self-differentiation is resolved. Finite personalities are annulled and absorbed in the process of God's self-realization through His own self-consciousness. The defects of Hegel's philosophical theory are due to his absolute monistic interpretation of reality. In Hegel's view, all is God, and God is all. Consequently in Hegel's view everything in reality is pure, noble and rational. But the world-picture that was presented by Hegelian philosophy does not tally with the world of our actual experience. There are certain non-rational, non-ethical and non-religious aspects in reality which cannot be denied. Moreover, there seems to be real existence of finite personalities in reality which cannot be denied. A personality excludes other personalities by its very nature. There can be no bartering of consciousness amongst personalities. Even if it is taken for granted that a finite personality is the 'other' of the Absolute, then also the difficulty is not solved for in that case an individual is reduced to a shadow of the Absolute, and thereby it is bereft of its unique individuality and freedom. Hegel's conception of God, therefore, does not seem to be philosophically consistent.

Bradley maintained that morality and religion were closely related to each other and that religion was a higher degree of reality than morality. According to him, morality leads to religion. Religion necessitates the existence of God. Religion implies a relationship between God and finite personalities. Faith is the most important feature of religious experience. Finite personalities relinquish their imperfections in the consciousness of their unity with God. Religious experience is, therefore, an important

stepping stone towards perfection. From the standpoint of religion God's universe is the perfect universe. It is the duty of all religious persons to perfect the world according to the will of God. God is a finite being. He stands over and above finite personalities and is superior to them by virtue of His relative perfection. He has the salient features of a personality. The existence of God and the significance of religion have merely practical significance. God is not real; but He is only an appearance. The relation between finite individuals and God involves self-contradiction. Religion is, therefore, unsatisfactory because of the instability of relation between God and finite personalities. God has no meaning outside of religious experience.⁶ God is real only in so far as He is related to finite individuals through religious consciousness. It is obvious, then, that God is not identical with the Absolute. The Absolute is beyond relations. It is non-relational and non-contradictory. Hence, it cannot become the object of religious consciousness. For the moment finite individuals start worshipping the Absolute the latter at once ceases to be real and gets reduced to an appearance. God must be conscious of Himself in religious experience. But since He is only a disappearing quality His experience must be imperfect. God is, therefore, not a permanent and abiding being, but He is only a transitory being. The existence of God involves movement since He is a transitory being, and, therefore, He cannot be called real for reality does not move and does not involve process of any description.⁷ God is a finite being since certain characteristics of personality are attributed to Him. Finiteness implies limitations and imperfection. The idea of God and religious consciousness are true for finite individuals so long as they have imperfect knowledge of the ultimate reality. The idea of God is inadequate when His existence is compared with the Absolute. The idea of God does not tally with the nature of ultimate reality. Hence, the idea of God cannot be reconciled with the conception of the Absolute, for in that case the former becomes a separate part within the latter. But the undifferentiated reality cannot contain

6 Bradley, F.H., *Essays in Truth and Reality*, p. 428.

7 Bradley, F.H., *Appearance and Reality*, p. 448.

separate reality within itself. Personal God is, therefore, only an appearance and not a reality. God as an appearance completely disappears into the Absolute and with Him religion too. The Absolute is the only reality.

Bradley's doctrine of finite God seems to be wrong. It is not necessary that a personality must be finite as Bradley pointed out. A personality, in our view, is a creative being which may be either infinite or finite. The common and essential characteristic of all personalities is creativity. It is, therefore, possible for God to have an infinite personality. Bradley dogmatically assumed that reality was undifferentiated and that there was no room for a finite God in undifferentiated reality. He dogmatically assumed the principle of non-contradiction as the foundation of his metaphysical system and evaluated all other phenomena with reference to that absolute criterion of non-contradiction and branded them as 'appearances'. He ruled out the possibility of the real existence of God from the standpoint of the absolute criterion of truth which he identified with undifferentiated reality. The inadequacy of Bradley's conception of God is due to the weakness of his metaphysical standpoint.

William James also maintained that God had a finite personality. But whereas Bradley maintained that God was an appearance James maintained that God was real. According to James, there is multiplicity of objects and individuals in the world. The plurality of objects and individuals cannot be packed in the closed system of the Absolute. Absolute monism suffers from the defect of identifying everything with undifferentiated reality and thereby overlooks the existence of diversity. A through and through 'block universe' is no universe at all. Moreover, absolute monism cannot satisfactorily account for the problem of evil. How can evil emerge out the Absolute which is perfect? The Absolute has nothing outside of itself; and hence, it has no environment; and consequently evil cannot be forced upon it from outside. The Absolute, therefore, becomes the source of evil. In that case the Absolute cannot be regarded as perfect and rational if it is regarded as the source of evil and imperfection. The existence of evil and imperfection cannot be denied for it is an actual fact of experience that finite person-

ties are imperfect beings. Now, if the parts are imperfect how can the whole or the Absolute be perfect? The definition of the Absolute as a perfect Being is, therefore, wrong. Pluralism, on the other hand, does not present a picture which is intellectually clean and morally elevated. The world-picture that pluralistic theory presents lacks pictorial nobility.⁸ A pluralistic theory of reality leaves room for multiplicity, diversity and relative independence of individuals.

According to James, finite God and finite individuals remain in mutual isolation in the multiverse. The Absolute and God are not identical. The Absolute is the wider cosmic whole of which God is the most perfect portion. God is not identical with the whole of reality, but He is the most ideal part of it. God has a finite personality.⁹ He is supreme amongst finite personalities. He is finite and limited because He has an external environment. He is sympathetic towards finite personalities and listens to their prayers. He helps finite individuals in their struggle with evil. He is a friend and a co-worker of finite individuals. He expects that finite individuals should co-operate with Him in His mission.¹⁰ God has external environment and has enemies. He will be victorious in the end in His struggle with evil. Finite individuals should co-operate with God in order to eradicate evil from the world.¹¹

The popular doctrine of William James is open to various criticisms. James dogmatically took it for granted that the world was hostile towards finite individuals and God and that evil existed as an objective and independent reality. James' interpretation of the world seems to be wrong. The world is not hostile, vicious and evil by its very nature. The world is non-moral in itself. Evil has existence only with reference to human personalities. Human personalities create evil by the violation of the moral laws. Evil has a human origin. Hence the conception of finite individuals' struggle with evil as an independent

8 James, W., *A Pluralistic Universe*, p. 45.

9 *Op. Cit.*, p. 125.

10 James, W., *The Will to Believe and Other Essays in Popular Philosophy*, p. 141.

11 James, W., *The Varieties of Religious Experience*, pp. 516-17.

reality seems to be wrong. However, even if it is taken for granted that the world is teeming with evils, then also we are faced with further difficulties. According to James, God has external environment and has enemies. Hence, it is quite possible that there may be a very powerful personality who may be the embodiment of evil and who may defeat God in the moral struggle. It is, therefore, not necessary that finite God will be able to defeat the forces of evil in the world. He may not be sure of His success since He is only a finite personality with limited powers. There is, therefore, doubt and danger in the leadership of such a finite God. If, on the other hand, finite personalities have confidence that God is powerful enough to eradicate evils from the world, then the former will lose their moral responsibility for eradicating evils from the world. It is a matter of common experience that when one knows for certain that a particular thing can be achieved without much effort, one loses a great deal of interest and enthusiasm in it. It is, therefore, quite possible that finite personalities would leave the major responsibility to God for eradicating evils from the world. Such a scheme of existence would be detrimental to genuine human freedom and moral responsibility. If God does the major part of the moral struggle against evil for human personalities, then the credit of achievement will be that of God and not that of finite personalities. The real credit will go to finite personalities when they eradicate their moral and social evils by their own initiative without the help and guidance of God. James' view of finite God seems to be philosophically unsatisfactory.

Like William James, G. H. Howison also objected to the idea of all-engulfing absolute monism which is fatal to the individuality and freedom of finite individuals. Howison was an advocate of a pluralistic interpretation of reality. He recognized the existence of plurality of finite personalities in the world with real individuality and freedom. But the pluralistic interpretation of reality of Howison was not similar to the earlier pluralistic interpretation of reality of William James. Howison did not maintain, like William James, that the world was a 'multiverse'; rather he pointed out that the diversity of the world was finally harmonized into a unity. According to Howison,

there is a hierarchy of finite individuals, and God is the highest amongst finite individuals. Finite individuals are the members of the 'city of God'. They are eternal because they have no origin in time. The plurality of selves is held in union by God. God is not identical with the Absolute. If God were identical with the Absolute, He would not possess a personality. God is a person and He is co-eternal with other finite selves and He co-operates with them in realizing their common ideal. This orientation towards the common ideal is known as evolution. God exists because finite selves exist. Finite selves eternally depend upon God though they are co-eternal with Him. Finite selves would not exist at all, if there were no God. Likewise God would have no meaning if finite selves did not depend upon Him. There is an inseparable connection between finite selves and God.

Howison's view is open to all the objections of a finite God that were already levelled against the view of William James. However, there are a few more defects in Howison's doctrine. His argument for the existence of God seems to be dogmatic. Howison argued that the very idea of the self and the idea of God were inseparably associated so that the existence of the self necessarily guaranteed the existence of God.¹² Howison's argument for the existence of God does not seem to be sound. The existence of finite personalities does not necessarily guarantee the existence of God at least in the way in which Howison stated his argument. Howison further argued that finite individuals were free because they were uncaused and uncreated. He pointed out that the doctrine of creationism excluded the possibility of freedom.¹³ But in the very next statement Howison observed that finite individuals were dependent on God. These two statements are inconsistent with each other. Finite individuals cannot be strictly speaking regarded as free if they are dependent on God. Howison tried to remove this difficulty by pointing out that finite individuals were free because God was free. This argument of Howison seems to be only apologetic. Further, Howison's view

¹² *Limits of Evolution*, p. 359.

¹³ *Op. Cit.*, p. 397.

of the uncreated and uncaused selves seems to be philosophically and scientifically untenable. If selves existed timelessly, then all scientific evidences in favour of the origin of human personalities through the process of evolution would be meaningless. The origin of human personalities through the process of evolution is a scientifically established fact. Howison's view of the timeless and causeless selves, therefore, seems to be wrong. Moreover, if finite selves were eternally held in union with God as Howison suggested there would be no necessity on the part of finite personalities to strive against evil and imperfection. Furthermore, the idea of a finite God who is being assisted by finite personalities in realizing their common goal does not seem to be appealing. For such a puny God who needs the assistance of finite individuals in realizing His ideal cannot evoke spontaneous reverence in finite personalities.

F. C. S. Schiller also maintained that God had a finite personality. In his view, God is not infinite, all-inclusive and self-complete. God is only a finite being amongst other finite individuals. He is an ego amongst other egos. There is the necessity of God in this world. If there had been no God, the world would have been swamped by evil. Hence, there is the necessity of a finite God who will remove evils from this world. If God were infinite and all-inclusive He would in that case be the source of evil. Hence, there is the necessity of a finite God in the world who will banish evils from the latter. God has limited power. If God were all-powerful, there would be no resistance of evil which God could struggle against. An infinite God can have neither personality nor consciousness for the latter depends upon limitations.¹⁴ God has to resist the external forces and impose His will upon them. Resistance to force indicates the finiteness of God. God is the creator and the protector of the world. He is not omnipotent. God would become the author of evil, if unlimited power were assigned to God and in that case it would be impossible for finite individuals to escape from imprisonment in God's Hell.¹⁵ Moreover, power

¹⁴ Schiller, F.C.S., *Riddles of the Sphinx*, p. 306.

¹⁵ *Op. Cit.*, p. 306.

implies finiteness. For power implies force which resists opposition, and the opposing forces limit the infinitude and unlimited power of the being who is opposed. A being cannot be considered as infinitely powerful if anything resists it. Infinite power of any being is, therefore, a meaningless¹⁶ concept. Moreover, an infinite God cannot have intelligence and wisdom because these attributes can exist only in a conscious personality. Infinite God cannot have any personality; and hence, the qualities of a self-conscious being cannot be attributed to Him. It follows, therefore, from this conclusion that the attribute of goodness cannot be assigned to God because in that case the real existence of evil cannot be accounted for. But the existence of evil in this world cannot be denied. God, therefore, must have a finite personality and His power must be limited. He is one amongst finite individuals. He is co-eternal with finite selves who are also uncreated. His existence is limited by the selves. Finite God with His limited power struggles along with finite individuals to overcome evil from the world.

Schiller's view of finite God is open to all the criticisms that were levelled against the views of James and Howison. If finite God really existed He would not be keen on imposing His will on finite individuals as Schiller suggested. Finite individuals carve out their careers by their free efforts. They do not require the constant guidance and influence of God. If finite God constantly guided and influenced finite individuals, then they would be deprived of their freedom and moral responsibility. If Schiller could dogmatically assume that God was a finite being amongst other finite personalities, then one might also assume in the same way that there are devils as the embodiments of evils who may influence finite individuals. In that case it cannot be ascertained whether humanity will progress or retrogress from the moral ideal. Besides this, the idea of God struggling with evil does not seem to be sound. For evil has significance mainly with reference to human personalities and human societies. Human personalities themselves are the source of evils. Physical evils are strictly speaking not evils in themselves, but they appear

¹⁶ *Op. Cit.*, p. 307.

to be so because they are not favourable to human well-being. The so-called 'physical evils' are amoral in their nature. Moral and intellectual evils have significance only with reference to human personalities and they alone can remove the former by their own efforts. It is, therefore, unnecessary to introduce the concept of finite God in order to remove evils from the world.

James Ward is also an advocate of pluralistic theism. He conjoined pluralistic interpretation of reality with theism. According to him, plurality of finite selves in the world is an undeniable fact. There is teleological continuity in the realm of spirits. In this principle of continuity there is a hierarchy of selves till the single supreme personality is reached. This supreme spirit is God, the *primus inter pares*. God is the highest in the series of spirits. But He does not transcend the highest limit. He is, therefore, finite as He does not transcend the series of finite spirits. He imposes limits upon Himself. He limited and determined Himself by creating the finite selves.¹⁷ He is, therefore, finite and personal due to His self-imposed limitation. He has limited power, and that is the reason why He can struggle with evil and overcome it. He aims at the best world by eradicating evils from the latter. Goodness will triumph in the end due to the goodness of God. The Absolute is the totality of finite individuals and God. Personality cannot be attributed to the Absolute. God and the plurality of individuals constitute the Absolute. He is not the Absolute, but He is only a finite being with limited power.

Ward's view of finite God is open to the same criticisms that were levelled against James, Howison and Schiller. His view is open to a few more criticisms. According to Ward, God is the highest limit in the series of finite selves. In that God appears to be a terminus of the universe. God is the limit, as it were, beyond which nothing can be conceived or nothing can evolve. Ward did not give any rational justification why there could be nothing higher than God in the series of selves. If God is the highest limit in the series of selves, then reality is finite and limited. From this point of view Ward's view is

¹⁷ Ward, J., *The Realm of Ends*, p. 243.

philosophically inadequate. For the moment it is asserted that reality is finite it may be immediately asked: What is outside this finite reality? Besides, Ward maintained that God was the creator of finite selves. His view of special creation of finite selves by finite God does not seem to be tenable on scientific grounds for it is an established fact that finite personalities evolved out Nature through the process of evolution. His theory of God as the first cause, therefore, seems to be inadequate from the scientific point of view.

* J. E. McTaggart also made a distinction between the Absolute and God. He refused to identify God with the Absolute. In his view, the Absolute is the society of selves with God as the *primus inter pares*. The Absolute is impersonal, but God has a personality. God is aware of His existence. He is self-conscious. He has the attributes of goodness in the sense that He can rightly be judged to be more good than evil.¹⁸ He is supreme amongst other finite individuals in the sense that He is more powerful than any other being.¹⁹ But He is not an omnipotent being. He cannot be regarded as the creator of selves for He is timeless. There can be no creation without beginning in time. The idea of creation would lead to indefinite regress. Finite selves are co-eternal with God. But God is supreme amongst selves. God is not the Absolute. An impersonal reality cannot be called God. The whole of reality cannot be regarded as God because in that case there would be no other self in it.

McTaggart's view of finite God is open to certain criticisms. In his view, God is not absolutely perfect, good and powerful. A finite God who has certain drawbacks of a finite personality cannot evoke religious sentiments in finite personalities. God, in McTaggart's view, is only one amongst finite selves; hence, it is quite possible that other finite individuals may excel God in goodness, power and perfection. It is, therefore, quite possible that God may not remain eternally supreme in the society of finite selves for He may be overtaken and excelled by other finite selves. Hence, the possibility cannot be ruled out that the Absolute in

¹⁸ McTaggart, J.E., *Some Dogmas of Religion*, p. 189.

¹⁹ McTaggart, J.E., *The Nature of Existence*, Vol. II, p. 176.

McTaggart's philosophical system may be transformed into a society of finite Gods. If finite personalities are transformed into Gods, who will take the position of the moral, religious and intellectual pilot in the society of Gods. The Absolute cannot take that exalted position since in McTaggart's view the Absolute is an impersonal being. Obviously, then, McTaggart's view of a finite God does not offer a lasting solution to the philosophical problem of divinity. Moreover, McTaggart was wrong when he held that the impersonal Absolute was entirely spiritual in its nature. He was wrong when he observed that physical phenomena and living organisms were mere appearances. The objective existence of physical phenomena and living organisms cannot be denied for they are scientifically established facts. They cannot be also regarded as purely spiritual or psychic phenomena. They have certain aspects at least which indicate that they are not purely spiritual or psychic phenomena. McTaggart's interpretation of reality is, therefore, unsound.

H. Rashdall also maintained like some of the earlier philosophers that God had a finite personality. He made a distinction between God and the Absolute. He maintained that God and finite spirits together constituted the Absolute and not God alone.²⁰ According to Rashdall, God is a person because He possesses the essential characteristics of a personality. God is supreme amongst finite personalities. He is a person who knows the world perfectly which human personalities know only imperfectly. The personality of God is more perfect than those of finite individuals.²¹ God is a self-conscious personality who acts in accordance with the moral law. He is limited by other finite selves and His power is also limited. He struggles against evil and tries to create the best possible world. The existence of God can be inferred from the moral order which pervades the universe. God is the sustainer of moral law and the governor of the moral universe.

Rashdall's doctrine of the finite God involves certain difficulties. It is difficult to conceive how the impersonal Absolute

20 Rashdall, H., *The Theory of God and Evil*, Vol. II, p. 240.

21 Rashdall, H., 'Personality: Human and Divine', *Personal Idealism*, edited by Henry Strat, p. 376.

could create a personal God as it was suggested by Rashdall. Rashdall inferred the existence of God on the basis of the moral order in the universe. It is true that there are moral persons and moral institutions in the world. There are also immoral persons and immoral institutions in the world alongside the moral ones and the former exceed the latter in porportion. Rashdall had a glimpse of the clue to reality, but he could not state his argument cogently. If moral order is actually established in the world it will be entirely through the efforts of human personalities and indirectly through the influence of immortal persons on human personalities. God does not guide the moral strivings of human personatities. At least there is no evidence that God actually guides the lives of finite personalities in accordance with ethical laws. If God were really the moral governor of the world human history would have reached its stage of ethical perfection ages ago. But God is certainly not the moral governor of our world because evil and imperfection are still rampant in human societies. It is true that there is the operation of moral laws in our world, but that God does not enforce those laws in our world by conscious will. Rashdall's conception of finite God, therefore, seems to be philosophically unsatisfactory.

The theory of finite God of personal idealists was a short interlude in the intellectual drama of mankind. Like the personal idealists Henri Bergson suggested a new line of thinking which was in vogue for some time amongst philosophers. Bergson maintained that God was evolution itself. In his view, God Himself is the *élan vital*. The *élan vital* is the ultimate reality. It is the perpetual upsurge of life. It is the source of creative evolution. The evolutionary process starts from this single principle. New things are created in the course of creative evolution. God is indential with the perpetual flow of life. He is the source of matter, life and mind. He is identical with the unceasing flow of life and freedom.²² God is not the creator, but He is identical with the unceasing flow of life itself. The doctrine of creation is philosophically unsound. Reality is identical with Becoming. God is Becoming itself. He has no plan

22 Bergson, H., *Creative Evolution*, p. 262.

or purpose. God as the *élan vital* takes directions spontaneously without aiming at ends. The concept of teleology suffers from the error of finalism.²³

Bergson's idea of God seems to be wrong. He identified the nature of God with evolutionary process itself. It is perhaps better to call evolution as a natural process rather than a divine process. It is difficult to conceive how an impersonal, non-conscious, non-teleological *élan vital* can be called God. If the process of evolution is nothing but a divine process, how can Bergson account for evil, imperfection, error and ugliness? If it is assumed that evil, imperfection, error and ugliness form the inevitable aspects of the evolutionary process as they actually are, then the process cannot be strictly called divine. Moreover, the concept of creative evolution is meaningless without the concepts of consciousness and teleology. Creative evolution necessarily involves the concept of conscious purpose. Perpetual flux without any conscious purpose is tantamount to capricious change. Evolutionary process which does not orient itself towards any ends may not necessarily be creative evolution. Evolutionary process without teleological orientation may end in chaos, confusion and cataclysm. Non-teleological evolution cannot be creative evolution; it may be at best a meaningless process of change. God cannot be regarded as identical with a meaningless process of change. The conception of an impersonal, non-conscious, non-teleological and non-creative God cannot satisfy the ethical, religious, æsthetic and intellectual aspirations of human personalities.

According to S. Alexander also the nature of God is intimately tied up with the evolutionary process of the world. However, his view is different from the views of other philosophers. In his view, Space-Time is the ultimate reality. Space and time are not two heterogeneous entities, but they are the two aspects of the same reality. Space-Time is an indivisible reality; it is the ultimate matrix of all forms of existence. Space crystalizes itself into matter, and time into motion, life and mind. Time is the cause of motion which goads the entire existence

23 *Op. Cit.*, p. 108.

towards a new quality called deity. Deity is always ahead of the world. It is the perennially unrealized quality which remains an everlasting 'nisus'. The 'nisus' is the next higher quality of the evolving world. The universe is pregnant with that unknown quality. It is not a realized quality, but it is the next higher and perpetually variable quality. The nature of the 'nisus' is unknown and unknowable. It is not possible for us to know what is the nature of the 'nisus'. It can be only said that the 'nisus' is not of the nature of mind.²⁴ The 'nisus' is not also equivalent to mind or any other quality of the order of mind. Therefore, deity is not spiritual in its nature, but it is something different from the latter. The spirit is subservient to deity which is yet to emerge. The deity is different from God. God is equivalent to the whole world which possesses the quality of deity. The world is the body of God the deity is His mind.²⁵ God is infinite by virtue of the infinitude of the 'nisus'. Deity does not exist in reality, but the whole world strains after it. It is the ideal God in embryo.²⁶ It is the unknowable future quality which can never be fully realized. It is not omniscient. It does not foreknow human actions because it is yet to be born. Omniscience and perfect goodness do not pertain to deity.²⁷ Deity is the next higher quality to the highest we know. Finite individuals also do not know the nature of deity because it has not yet emerged. It is the unknown future quality.

Alexander's conception of the deity is the result of his speculative thinking. In his view, Space-Time is non-material, non-mental and non-teleological. It is, therefore, doubtful how such a reality could produce matter, life and mind if the nature of the former is essentially different from that of the latter. Alexander's doctrine of Space-Time is wrong from the point of view of sciences. From the standpoint of modern physics space has quasi-physical properties. Moreover, the deity that Alexander conceived does not exist in reality nor can it ever become real at any time in future. For, according to Alexander,

24 Alexander, S., *Space, Time and Deity*, Vol. II. p. 34.

25 *Op. Cit.*, p. 353.

26 *Op. Cit.*, p. 365.

27 *Op. Cit.*, p. 389.

at whatever stage we are in the evolutionary process deity is always about to emerge at the next higher level. Deity can never come to possess real existence at any stage of the cosmic evolution because the moment it becomes real, it ceases to be the infinite 'nissus' and it is reduced to a finite reality. It appears on a close examination of Alexander's theory of reality that the 'nissus' emerges out of the momentum of Space-Time. The 'nissus' is the forerunning quality which becomes real through the process of evolution. Hence, strictly speaking, the universe of Alexander seems to be packed with a hierarchy of deities. In this sense all finite objects and individuals were deities of the past. In other words, all finite objects and individuals were once deities. However, even if it is interpreted that deity is an unattainable quality as Alexander opined, then deity is only an abstraction,—a mere intellectual construction. Deity is not an actually existing reality, but it is only an ideal towards which the cosmic evolution orients itself. But an ideal cannot exist in a vacuum; it must be in the form of an idea in some personality. An ideal or a quality cannot exist by itself. Deity is, therefore, neither an actual being nor will it ever become actual at any stage of the cosmic evolution. It is a perpetual illusion like a mirage. An unborn and unknowable deity cannot be the object of finite individuals' religious communion. May Sinclair remarked that Alexander's deity was not meant to exist and even if it came into existence it might be a perfect scandal.²⁸ Alexander's theory of God is also open to certain criticism. Alexander maintained that God as the whole universe which was straining after deity did not exist.²⁹ In his view, God's body is identical with Space-Time in its process of evolution. Now, God's body which is Space-Time presents the idea of an ever-expanding physique of an organism. Lloyd Morgan remarked that Alexander's view of reality gave an idea of an expanding pyramid with Space-Time as the base and the 'nissus' as the ever-receding apex.³⁰ It appears, then, that God's body is for ever expanding with no possibility of the emergence of His mind in the form of the actual existence

²⁸ *The New Idealism*, p. 211.

²⁹ *Mind*, Vol. XXX, p. 428.

³⁰ *Emergent Evolution*, p. 11.

of the 'nisus'. The idea of an ever-expanding physique of a personality with no possibility of the growth of its mind in it conveys the idea of a perfect idiot. Alexander's doctrine of God, therefore, seems to be absurd.

While Alexander maintained that deity was expected to emerge, Lloyd Morgan held that God was the author of the evolutionary process. According to Lloyd Morgan, the world is in the process of making and in the process of evolution we find the emergence of something new. For instance, living phenomena are not already latent in non-living phenomena, but rather the former are new phenomena which emerge without any apparant cause for their appearance. God is not an emergent quality, but He is the author of the world. The world is the expression of divine purpose. God is the source of creative activity in the world. He is the directive principle of emergent evolution. He is immanent in the world. He is the universal spiritual principle and the ultimate source of the evolutionary process. The world is ultimately dependent upon God.³¹ God is beyond the evolutionary process though He is immanent in it. He transcends the evolutionary process of the world. However, in spite of the fact that God transcends the evolutionary process of the world He constitutes the substance and the causal principle of all objects and individuals of the world.³²

Morgan's view is open to certain objections. He did not systematically work out his theory concerning the nature of God. His approach to the problem of God was from the point of view of naturalism. He tried to bring about a reconciliation between naturalism and theism, but he was not able to work out his theistic explanation of the evolutionary process systematically and cogently. Morgan tried to revive the old and the obsolete doctrine of God as the first cause of the causal series of our world. He also suggested that God controlled and guided the evolutionary process of the world. He believed that everything in the world happened in accordance with the predeterminded plan of God. But divine predetermination of the evolutionary process is

³¹ *Op. Cit.*, p. 116.

³² *Op. Cit.*, p. 116.

inconsistent with naturalistic explanation of the latter. There is no evidence to substantiate Morgan's view that God guides the process of evolution. Sometimes the evolutionary process takes place by trial and error. If God directed the evolutionary process the aspect of trial and error would not be there in the latter. Further, Morgan's theory of emergent evolution in the sense that entirely new phenomena come into existence through the process of evolution is wrong in the light of the present position of biological sciences. Living phenomena are not completely different from the non-living as Morgan believed, but, in fact, there is no sharp line of demarcation between living and non-living phenomena. The doctrine of absolutely new creations without reference to their antecedents is untenable from the scientific point of view. Matter, life and mind are not completely heterogeneous in their nature as Morgan believed, but rather they involve one another in the sense matter has certain potentialities which under certain suitable conditions evolve into living organisms and living organisms have certain potentialities which under certain favourable conditions evolve into conscious phenomena. The process of evolution, then, is a process of transition from the implicit to the explicit states of certain aspects of Nature. Morgan took refuge in the conception of God because he could not satisfactorily explain the various phenomena of Nature from the naturalistic point of view.

Theistic explanation of the evolutionary process which was given by Bergson, Alexander and Lloyd Morgan was a novel philosophical interpretation of our world. But their world hypotheses were philosophically inadequate for they could not satisfactorily reconcile the theistic explanation with the naturalistic explanation of the evolutionary process. The views of personal idealists and theistic evolutionists on the nature of God constituted a brief interlude in the intellectual drama of mankind; and since their views were too naïve and the inconsistent they ceased to have intellectual appeal to thoughtful persons before long. Once again the conception of God as an infinite and eternal Being was in vogue amongst modern philosophers as it used be so amongst ancient and mediaeval philosophers. The dominant tendency has been amongst philosophers to assign a

very high position to God. We shall make a passing reference to the views of those philosophers who assigned a very high position to God in the scheme of existence.

A. J. Balfour maintained that God was a supreme Being who guided finite individuals in realizing their higher values of lives. In his view, great truths are divinely revealed to finite individuals when they are religiously inspired. All inspired writings of finite personalities proclaim some inspired authority.³³ Lotze and Schleiermacher also maintained that God was the supreme Being and that feeling was the essential aspect of religious experience. Lotze maintained that the nature of God could be realized through humility, devotion and love.³⁴ Schleiermacher also maintained that feeling of dependence was the most important element of religious consciousness. In his view, the essence of religion is neither thought nor action, but feeling.³⁵ Religious feeling paralyzes human actions and absorbs human personalities in a state of ecstatic enjoyment. In religious consciousness an individual feels that he is the product of the Infinite. Höfding also maintained that feeling was the most important aspect in religious experience.³⁶ William Temple maintained that finite individuals could receive divine grace, if they had a submissive attitude towards God. In his view, God cannot be known through reasoning, but He can be known only through living contact with Him. Finite personalities must submit to God in order to receive His eternal message. Finite individuals are like clay in the hands of the supreme Potter and the welfare of the former consists in knowing the supreme authority of the latter.³⁷ Sorely also described the relation of finite individuals and God in the same fashion. He pointed out that in the presence of God finite individuals were absolutely powerless and that they were clay in the hands of the divine potter who could honour one vessel and dishonour another by His

33 Balfour, A.J., *Theism and Thought*, p. 250.

34 *Microcosmus*, Vol. II, p. 676.

35 *Reden Über die Religion*, p. 50. (Quoted in Baron F. von Hugel's, *Eternal Life*, p. 185).

36 *The Philosophy of Religion*, p. 1.

37 Temple, W., *Nature, Man and God*, p. 402.

free will.³⁸ Royce also emphasized the all-engulfing power of God and belittled the individuality and freedom of finite individuals. In his view, finite individuals possess their individuality in God and for God.³⁹ The will of God works through the finite individuals. Finite individuals possess their unique individuality due to the unique interest of God in them. The purpose of finite individuals is to surrender themselves in devotion to God. The sole purpose of their lives should be to surrender their will to the service of God.⁴⁰ John Caird opined that finite individuals could realize the nature of God through loving communion with the latter. In his view, God sympathizes with finite individuals and heals their sin-burdened souls and recognizes their devotions towards Him.⁴¹ Henry Jones pointed out that the blind and pathetic gropings of finite individuals after the best was due to the working of the divine will in them.⁴² Edward Caird also maintained that the religious experience of finite individuals was due to their consciousness of the all-embracing unity of God.⁴³ A. N. Whitehead maintained that God had vision of all possibilities of the world and that He wished finite individuals to participate in His plan. According to Whitehead, God furnishes the subjective aims to all finite creatures. God prehends all the prehensions of finite individuals. He is the fellow-sufferer of finite individuals.⁴⁴ But the decisions of finite individuals cannot be the decisions of God. God is non-temporal whereas the world is temporal. He is the self-surpassing Being in the sense that He surpasses all other conceivable beings. The Primordial Nature of God is limited by actuality which it presupposes. The Primordial Nature of God is complete, perfect and infinite.⁴⁵ The Consequent Nature of God is relative and is in flux.⁴⁶ All possibilities of the world are determined by

38 *Moral Values and the Idea of God*, p. 494.

39 *The World and the Individual*, Series II, p. 433.

40 *Op. Cit.*, p. 388.

41 Caird, J., *The Fundamental Ideas of Christianity*, Vol. II, p. 186.

42 *A Faith that Enquires*, p. 279.

43 *Evolution of Religion*, Vol. II, p. 85.

44 Whitehead, A.N., *Process and Reality*, p. 532.

45 *Op. Cit.*, p. 523.

46 *Op. Cit.*, pp. 523-7.

God. God is like an infinite reservoir in which actual entities have their being. He is the super-actual entity in which all living entities are preserved not only in their objective immortality, but also in their subjective immortality. J. E. Boodin maintained that finite individuals were nurtured on the very bosom of God. In his view, God is the soul of the whole world. He is eternally perfect. He is present in His perfect integrity everywhere.⁴⁷ These are the views of some of the philosophers according to whom God is the infinite and eternal being who predetermines in some way or the other the future courses of actions of all human personalities. The views of the philosophers mentioned above are defective in many ways and they have been vehemently criticised by innumerable critics. We think that it is needless to critically examine the views of the philosophers that were mentioned above. We shall give a brief statement of our view on the nature of God in the following few pages.

Human conceptions of God differ widely from person to person. Differences in human conceptions of God are to a very great extent determined by the nature of comprehension of reality of different persons. It is evident, then, that personal element is very often involved in the various human conceptions of God. However, we do not suggest here that the various human conceptions of God are purely subjective. In our view, God has objective existence. But He is not necessarily identical with the different human conceptions of Him. Very often persons identify God with some idea or object which is not God. In some such cases the conception of God is mainly subjective and in certain other cases the conception of God is anthropomorphic. Atheistic or agnostic attitude of a large number of persons in contemporary period is due to the fact that the conceptions of God of most of the philosophical and religious doctrines are logically inconsistent and scientifically unconvincing. Most of those persons who have belief in the existence of God do so on faith rather than on conviction produced by scientific understanding of Nature and intuitive glimpses into the nature of

⁴⁷ Boodin, J.E., *God: A Cosmic Philosophy of Religion*, p. 41.

reality. The traditional proofs for the existence of God are not very satisfactory and convincing and some of them are open to certain criticisms. We shall briefly examine certain types of philosophical and religious theories which have produced misconceptions regarding the nature of God.

According to most of the philosophical and religious doctrines, God is the creator of our world and perhaps many other worlds like our own. God is immanent in our world and all phenomena of Nature operate in accordance with His laws. The nature of God becomes more and more explicit through the process of evolution. However, in spite of the fact that God is self-fulfilling through the evolutionary process He is self-fulfilled. All values are eternally realized in Him. There is the process of descent and ascent of the divine reality. Divine reality differentiates and manifests itself in the form of diverse phenomena of Nature. Human personalities who have the spark of divinity in them hold communion with God. God is pure Being. He is the unmoved mover of all things. In brief, this is one variety of the conception of God which is generally found in philosophical and religious literature.

We would like to point out here that this type of theories regarding the nature of God is philosophically unsatisfactory. We shall interpret such a conception of God from our philosophical standpoint. In our view, persons who uphold such a conception of God wrongly identify the nature of God with our universe which is a cosmic value. Our universe as a cosmic value is not a person even though it may have certain characteristics of a personality. A personality, in our view, must be creative in its nature. Our universe is not a creative person, but it is one of the cosmic values that was created by the Absolute. It has the semblance of a personality because it has an organizational aspect represented by its innumerable steller and galactic systems and a teleological aspect which it partook of from the Absolute at the time when the former was created. Its universal teleological principle operates through various phenomena of Nature. It differentiates itself into many worlds which are otherwise known as stellar and galactic systems. Its self-differentiations are due to the operation of the teleological principle which it

shared in from the Absolute. The manifoldness of Nature is due to the unfoldment of the teleological principle of our cosmic value through the evolutionary process of the cosmos. Our universe has internal dynamism, but it has hardly any external dynamism. It has creativity within its system through the process of evolution, but it hardly creates values outside its own system like a creative person. There is the operation of creativity mostly within the cosmos, but there is hardly any creativity outside the latter apart from the emergence of immortal persons who may leave the cosmic boundaries in the advanced stages of their immortal existence. A cosmic value in which the teleological principle has become sufficiently dim due to the lapse of time cannot normally create values like a creative person. There is only internal dynamism in it in the form of creative evolution in our cosmos. There is internal push of creativity through the evolutionary process due to the operation of the teleological principle that our cosmos partook of from the Absolute. Since our universe has only internal dynamism and hardly any external dynamism it has the appearance of Being when the latter is conceived in its wholeness. In other words, Becoming is considered to be subservient to Being so far as our universe is concerned. For instance, the conception of *Hiranyagarbha* or the golden egg as it is described in the Vedas or the conception of *Brahman* as it is described in the *Upanishads* is analogous to our conception of cosmic value. *Hiranyagarbha* or the golden egg contains the creative force and the germ potentials of everything that exists. It is identical with *Prajâpati* or the Lord of all creatures.⁴⁸ *Prajâpati* is the first born. He is the life force itself, which evolves and develops into innumerable worlds. The world overflows out of His substantial being. The creativity of the world is governed by the universal and immutable law which is described in the Vedas as *Rita*. The conception of *Rita* is analogous to the conceptions of *dikaïosynê* of Plato and *jus naturalis* of the Stoics. It is the universal law of cosmic order and justice in accordance with which all phenomena of Nature operate. Likewise the conception of *Brahman* of the *Upanishads*

48 *Rig Veda*, X, 121, 1-10.

corresponds to our conceptions of cosmic value. *Brahman* burst forth and grew into the world. It created the world, entered into it and became the empirical world.⁴⁹ Hegel's conception of God is analogous to our conception of the universe as a cosmic value. In his view, God fulfils Himself through the dialectic process in Nature and human history and becomes conscious of Himself through His self-consciousness. Likewise Croce's conception of spiritual reality which operates through human history has a close affinity with our conception of cosmic value. Similarly Toynbee's conception of God has some similarity with our conception of cosmic value. In his view, human history evolves in accordance with the ethical laws of God. These are some of the instances which bear testimony to the fact that most of the philosophical and religious theories concerning the nature of God are analogous to our conception of the universe as a cosmic value. In our view, our cosmos differentiates itself into many stellar and galactic systems and innumerable varieties of physical phenomena, living organisms, human personalities and so on. All forms of creativity of different types of objects and individuals owe their origin to our cosmic value which partook of the creative teleology from the Absolute. The teleological principle which pervades the vast dimensions of our universe is usually described by philosophers and theologians as 'Cosmic Consciousness', 'Universal Mind', 'Spiritual Principle', 'Logos' and the like. Such expressions are generally considered to be the epithets of God. But most of such philosophical and religious theories which have a tendency for identifying the nature of God with the teleological principle of our universe are wrong. God is not identical with the teleological principle which our cosmos partook of from the Absolute and thousands of worlds which emerged in the course of cosmic evolution are not the creations of God. In sum, most of the philosophical and religious doctrines which tend to identify the nature of God with our universe as a cosmic value are wrong.

According to certain philosophers and theologians, there are many deities who pervade the different aspects of Nature.

49 Sinha, J., *A History of Indian Philosophy*, Vol. I, p. 6.

Divine principle is objectified in different aspects of Nature. Deities have certain qualities like those of human personalities. Some of the deities are males and others are females.* Some of the gods and goddesses are powerful, omniscient, loving and merciful beings. They respond to the prayers of human personalities and help them. Some of them punish human personalities if the latter are repentant for their sins. Certain gods and goddesses incarnate themselves in the form of human personalities or certain other forms of living organisms. Those incarnations live in human societies and play their rôles as saviours. According to certain philosophers and theologians, One Supreme God sends His messengers to certain human societies to save the entire mankind from moral degradation. According to certain philosophers and theologians, deities and divine messengers guide the destinies of human personalities individually and human history as a whole. All aspects of Nature are presided over, controlled and directed by deities and innumerable varieties of divine messengers.

In our view, polytheistic and pantheistic theories of the divine principle seem to be wrong. Polytheistic and pantheistic interpretations of the divine principle are mainly due to the fact that philosophers and theologians wrongly identify deities with different aspects of Nature. They find that each aspect of Nature has some meaning and purpose, and they consider the latter as symbolic of divine principle. Their polytheistic and pantheistic interpretations of the universe may be justified in the sense that each phenomenon of Nature has a teleological aspect. But their views are wrong when they hold that each aspect of Nature is presided over, controlled and directed by deities. Their conceptions of deities are anthropomorphic in their nature. Human conceptions of deities are, therefore, to a very great extent subjective. From this point of view psychological interpretations of various conceptions of God or deities given by many psychologists are not entirely wrong. The psychological implications of prayer and worship of deities seem to be mainly for self-purification. It seems, therefore, that polytheistic or pantheistic conceptions of God are philosophically unsatisfactory.

God does not send His messengers to human societies in order to guide human personalities on ethical lines. The so-called 'divine messengers' were real human personalities who lived and moved in human societies. They attracted multitudes of admirers and appreciators around them by dint of their sheer intelligence, power and creativity. They made their appearance in human societies particularly in those periods of human history when vast majority of persons were naive and intellectually backward. Consequently masses of mediocre persons were highly influenced by the wise sayings and miraculous performances of those exceptional persons. In modern terminology such persons may be described as extremely wise, powerful and creative persons with a great altruistic outlook. Their wise sayings and deeds had ethico-religious significance. Hence, they became the originators of certain religious doctrines and institutions. Such persons generally became immortal persons after the termination of their gross bodies and they are still being adored and worshipped by generations of the progeny of disciples that the former left behind them. Large number of persons all over the world still remember them with great reverence and worship their images or their symbols or the works that they left behind them. The modes of worship of different groups of persons may differ, but the main purpose of worship of almost all religions is the same. Persons worship their respective 'deities' or 'divine messengers' or more appropriately 'immortal persons' so thatnescience in the former may be overcome and they may have the apprehension of reality through direct communion with the latter. The so-called 'deities' or 'divine messengers' were actual human personalities who became immortal persons after the termination of their gross bodies due to their relatively clear comprehension of reality and well-defined creative teleologies. They have an intermediate status between human personalities and God. They are, therefore, not deities, but they are a particular type of immortal persons who are in touch with human personalities who are religiously predisposed, on the one hand, and with God, on the other. In genuine cases of prayer and worship certain immortal persons, who are usually referred to as deities, are invoked who respond to the sincere prayers of human personalities. In brief,

neither the conception of polytheism nor the conception of pantheism is philosophically consistent.

What, then, is the nature of God? In our view, Godth is the Absolute. There is no distinction whatsoever between the nature of God and that of the Absolute. God and the Absolute are absolutely identical. What is, therefore, the value of two names for the same personality? Logically speaking it is unnecessary to have two names for the same infinite-eternal personality. We have preference for the term 'the Absolute' to the term 'God' for two important reasons. Firstly, 'the Absolute' being identical with reality is expressed in neuter gender. Sex distinctions do not pertain to immortal persons and the Absolute. Secondly, the Absolute being identical with reality is free from all anthropomorphic associations. In contrast with the term 'the Absolute' the term 'God' has certain defects. Firstly, the term 'God' is expressed in the masculine gender. Certain Western philosophers and theologians conceive God as the Cosmic Father. According to them, God is conceived as the first cause and the unmoved mover of all things in our world. Certain Oriental philosophers and theologians conceive the divine principle as the Cosmic Mother. According to them, the Cosmic Mother is the matrix of all things that exist in our world. But philosophically speaking God is neither a masculine nor a feminine person, but He (more appropriately It) is a neuter person, who transcends all characteristics of male and female sexes. Strictly speaking, therefore, the term 'God' should be expressed in the neuter gender even though such an expression would be outrageous to the conventional use of the term. Secondly, the term 'God' has many anthropomorphic associations. God is usually conceived as gracious, kind, merciful, loving, benevolent, just and so on. The qualities of kindness, mercy, justice, benevolence and the like do not pertain to the nature of God, but they are attributed to the nature of God by human personalities. Most of the philosophical and religious doctrines concerning the nature of God, therefore, suffer from anthropomorphic associations. Moreover, we find through a psychological analysis of various conceptions of God and religious experiences of persons that the former are generally the expressions of the apprehension of reality primarily

from the emotional point of view. But those philosophers who attach adequate importance to intellect in religious experience have a marked tendency in their views for identifying God with the Absolute or reality. It is obvious, then, that the term 'the Absolute' is philosophically more satisfactory than the term 'God'. The term 'the Absolute' is, therefore, definitely preferable to the term 'God'. However, we do not suggest here that the term God has absolutely no significance in human experience. The existence of God as an appreciative personality has significance from religious point of view. Religion is to a very great extent⁴ a personal affair. The subjective element is predominant in the religious experience of a human personality in the sense that the affective aspect is private and personal. A human personality tries to apprehend reality and commune with it from the emotional point of view. In religious experience there is exuberance of altruistic affect in the process of apprehension of reality. The vision of a poet and that of a religious person are similar to a very great extent because they both try to apprehend reality primarily from the emotional point of view. The most conspicuous difference between a visionary poet and a religious person mainly consists in the fact that whereas the former expresses his feeling in the form of harmony of linguistic forms, the latter expresses his adoration for reality and various expressions thereof through exuberance of altruistic affect. Nobody can have clear and comprehensive apprehension of reality exclusively from the religious point of view. Religious experience gives only a partial view of reality to a human personality. The method of apprehension of reality that is diametrically opposed to the religious method of apprehension is the method of logical analysis. Whereas religion over-emphasizes the rôle of altruistic affect, logic over-emphasizes the rôle of intellectual analysis in the apprehension of reality. The epistemology of sciences tries to steer the midway between the unique methodologies of religion and logic. Scientists rely mainly upon empirical confirmation for arriving at valid conclusions. They neither reject actual facts of experience nor do they reject logical consistency. They believe in the actual facts of experience, but they also try to see that the actual facts of experience tally with some form of logical

consistency. Whereas logicians may even sacrifice facts of experience for doggedly sticking to consistency, scientists stick to facts of experience and try to correlate them with some form of logical system. The epistemology of sciences remains mainly on the correlational level. Whereas scientists very seldom take speculative jump into the realm of the unknown, philosophers frequently take speculative jump into the realm of the empirically unknown and try to comprehend reality directly through the method of intuitive apprehension. The philosophical method of apprehending reality through intuitive method is the most direct and comprehensive form of knowing of all other methods of comprehension. The methodologies of knowledge of religion, logic and sciences are imperfect compared to the methodology of philosophy. The methodologies of sciences are superior to those of religion and logic in the sense that the former eliminate the drawbacks of both the methodologies and accept only their points of advantage. Of late there is a tendency in sciences to incorporate certain features of the methodology of philosophy. That is the reason why thoughtful persons have great faith in the epistemology of sciences. However, we do not completely belittle the value of epistemology of religion. The epistemology of religion has the main characteristics of wonder, awe, marvel and the like on the apprehension of the most wonderful, and mysterious working of human life, Nature and the cosmos. The feelings of wonder, awe and amazement in human personalities on the apprehension of the grand, majestic, sublime and mystic aspects of human existence, Nature and the cosmos constitute the affective tone behind the human urge to closely and clearly apprehend the various aspects of reality. The affective tone in the epistemology of religion is one of the most important driving forces behind human urge to comprehend reality. Logicians, scientists and philosophers in the earlier stages of their attempts to investigate into the nature of reality derived immense inspiration from the affective tone of the epistemology of religion. The epistemology of religion is the primordial method of comprehending reality. That is the reason why religious leaders and schools of religious thought were so rampant in the earlier phases of human history. The epistemology of sciences has stronger appeal to

thoughtful human personalities than that of religion, which has been of late relegated to the background of human experience. The appeal of the epistemology of philosophy, particularly our epistemology of philosophy, will be far stronger to creative persons than the epistemology of sciences in its present form in not too distant future. Lately there has been a gradual transmutation of the epistemology of religion into those of certain social and behaviour sciences and perhaps there will be a similar transmutation of the epistemology of sciences into that of philosophy. The epistemology of religion has not become completely extinct, but it has undergone a process of transmutation in the contemporary period. The affective tone in the process of comprehension of reality which is a conspicuous feature of the epistemology of religion still persists in the epistemology of sciences and that of philosophy even in the contemporary period. However, the affective tone in the epistemology of sciences and that of philosophy is superior to the affective tone in the epistemology of religion because whereas the former is balanced and systematized particularly by empirical verification and logical consistency, the latter has a tendency to ignore the claims of both empirical verification and logical consistency in favour of retaining the purity of its altruistic affect. It cannot be denied, however, that in spite of the process of transmutation which the altruistic affect of the epistemology of religion has undergone lately due to the chastening effects of empirical verification and logical consistency it has a great value in apprehending reality either through the epistemology of sciences or through that of philosophy. Moreover, since all human personalities have affective aspects in their personalities religion which is the supreme matrix of all forms of altruistic affects has always some place in human life. Belief in the existence of God gives satisfaction to the emotional aspect of a human personality.

In our view, God is the Absolute. There is absolute identity between the nature of the Absolute and the nature of God. Hence, in order to avoid repetition we shall not dilate on the nature of God. The nature of the Absolute that we described in the earlier chapters of this work holds good also of the nature of God. We would only like to emphasize here that God has appreciation for

the values that finite personalities create. God as the appreciator of values is usually described by philosophers as the 'God of Love'. But we have preference for the expression 'God as the appreciator of values' compared to the expression 'God as the God of Love' because the latter is associated with anthropomorphic associations. God appreciates the values created by finite personalities, but he neither favours nor disfavours any one of the latter but He allows them to carve out their destinies by their own efforts. He has appreciation for the values that finite personalities create, but He neither favours nor disfavours any person. He does not have direct relation with human personalities. He has no necessity for responding to the prayers of finite personalities. Immortal persons who are usually known as 'deities', 'divine incarnations' and the like respond to the sincere prayers of human personalities and ethically guide the latter. The comprehension of ordinary human personalities does not generally extend beyond the dimensions of our universe. Hence, ordinary human personalities do not generally have clear comprehension of the nature of God who is identical with the Absolute. However, *jivanmuktas* or persons with embodied release have the capability of holding communion with God through meditation; and God also orients His appreciative apprehension towards the former. God does not predetermine the activities of human personalities either individually or collectively. Most philosophers and theologians erred in believing that God predetermined all events of our world and many such worlds. In our view, God completely transcends our universe which was created in the past as a cosmic value. Our universe and the various worlds which emerged out of it in the course of the cosmic evolution are governed by the laws of our cosmos. The laws of our cosmos are nothing but the expressions of the teleological principle that our universe as a cosmic value partook of form God. Likewise various phenomena of Nature are governed by their respective laws, such as physical phenomena are governed by physical laws, living organism are governed by biological laws and so on. In other words, all phenomena of Nature are governed by their respective natural laws. The natural laws of the various phenomena of

Nature are again the expressions of the teleological principle that our universe partook of from God when the latter created it. God transcends our universe which is a cosmic value and innumerable such cosmic values that He perennially creates. Hence, the conception of divine control or predetermination of the various phenomena of Nature including human affairs is uncalled for. In our view, the laws of various sciences are provisionally sufficient for explaining the phenomena of Nature. These laws will be quite sufficient in not too distant future when the concept of creative teleology is taken into consideration in explaining the various phenomena of Nature. Certain biologists and psychologists have already explicitly or tacitly taken into consideration the concept of 'creative teleology' in explaining the behaviour of living organisms and human personalities. It is, therefore, quite possible for philosophers and scientists to arrive at a sufficiently consistent world-view even without the introduction of the concept of God provided the former have detailed knowledge of all the laws that govern the various phenomena of Nature. Cosmic values that God created are extremely different from one another because the creative teleology of the latter is supremely original. It is, therefore, quite likely that scientists may not be able to know exactly what is outside our universe by the epistemology of sciences. But perhaps scientists can know quite a lot about the nature of our universe and the laws in accordance with which the various phenomena of Nature operate by the epistemology of sciences even by completely ignoring existence of God. It is, therefore, true that for a scientist it makes practically no difference whether he has belief in the existence of God or not, for the various phenomena of Nature with which he is directly concerned are free from divine control. The various aspect of the universe can be explained from the standpoint of the inherent natural laws of the latter. God created cosmic values which persist as souvenirs of the past, but He did not create finite individuals and object of our universe. Finite objects and individuals of our universe came into existence through the natural process of evolution.

Belief in the existence of God is mainly a matter of personal altruistic affective attitude of a person towards reality. A

religious person who has an attitude of complete self-surrender to God and despises the methods of sciences, logic and philosophy does not acquire any special merit. His attitude is the expression of his ignorance. An atheist or an agnostic, on the other hand, who tries to apprehend reality by epistemology of sciences, logic and philosophy does not acquire any special demerit. His attitude is that of a cautious and critical observer. In other words, disbelief in the existence of God is not necessarily a sin as it is generally believed by certain philosophers and theologians. Atheistic or agnostic attitude of a person in his disinterested love of knowledge is tantamount to the orientation of his knowing processes towards the apprehension of reality minus his affective attitude towards the latter. Belief in the existence of God produces a feeling of completeness in finite personalities in their process of comprehension of reality. The altruistic affect of finite personalities must be taken into consideration in the process of comprehension of reality. All aspects of human personality must be involved in the comprehension of reality for getting a wide perspective of the latter. *Bhaktiyoga* or the attitude of devotion towards God must form an integral aspect of an all-round methodology of knowledge, but as a method of knowing reality it is never sufficient by itself. Those who consider *bhaktiyoga* or the attitude of devotion towards God as the only method of comprehending reality and despise the methods of sciences and logic adopt the policy of ostriches which thrust their heads into heaps of sand at the sight of their enemies. The affective attitude towards God must form an integral aspect of the comprehensive method of apprehension of reality. There is, therefore, the importance of the belief in the existence of God and having religious feeling towards the latter. A creative person who has glimpses of intuitive apprehension of the nature of God has reverence for the infinity, eternity and perennial creativity of the latter. Religion of a creative person is not one of blind and uncritical credulity in the existence of God, but rather his religious conviction is based upon rational understanding of the nature of God. Religion, therefore, must be fused into philosophy through the channel of logical consistency just as sciences merge into philosophy through the channel of axiology in the

general sense. Religion and sciences will reach the acme of perfection through their conflux with philosophy. The religious attitude of a creative person is not one of passive admiration for the glory of God or one of complete self-surrender in the presence of His supreme excellence or one of silent contemplation on His supreme creative teleology, but his attitude is one of appreciation for the novel and original values that God perennially creates. Moreover, he himself creates his own novel and original values which are appreciated by God. Creativity is the universal law of reality. Hence, a creative person cannot have clear comprehension of the nature of God unless the latter is apprehended in the process of His perennial creative advance. The nature of God as the perennial creator of cosmic values can be apprehended only when a creative person himself creates novel and original values through which he may have glimpse into the central theme of creativity of reality. A creative person must plunge in the perennial stream of creativity in order to feel its living throb directly and intimately through actual contact with the latter. He may feel the living pulse of ceaseless creative advance of reality when he allows himself to be raised and elevated wave after wave of subtler and richer cosmic values that are being perpetually created by God. However, he is not a mere passive recipient of the undulations of creativity which are given expression to by God, but he also progressively creates his own novel and original values of increasing subtlety and richness so that the creative expressions of finite personalities and God form a harmonious concord. All values constitute the units of a harmonious configuration because the former are the expressions of the same rhythm of creativity with its divergent offshoots. The religion of creative persons, therefore, reaches the acme of perfection when there is concord between the values that they create with the values that God Himself creates. Religious communion of finite personalities can, therefore, be established when the creative expressions of the former are in perfect concordance with the creative expressions of God. In other words, religion of creative persons, is nothing but mutual appreciation of values that are being incessantly created by finite personalities and God. God creates values that finite personalities appreciate

and God appreciates values that finite personalities create. In religious communion creative personalities are able to clearly and comprehensively appreciate the values that their fellow-beings and God create, and their own values are being appreciated by God. However, values are not created either by God or finite personalities with the sole end that they will be appreciated by somebody. Both God and finite personalities create values for their own sake. Appreciation of values either by God or by finite personalities is only incidental. It is true that there is harmonious union between finite personalities and God in religious communion because the latter are engaged in mutual appreciation of their values which have relative stability. But the nature of finite personalities and God cannot be fully appreciated when the superjections of creativity of the former transcend their creative expressions. In other words, religious communion cannot be fully established between finite personalities and God when the latter are in their creative advance. Superjection of creativity eludes comprehension because it is fundamentally indeterministic in its mode of operation. Hence, it is impossible in principle for any finite personality to hold permanent and uninterrupted religious communion with God at any stage of his religious progress. Religious communion between finite personalities and God is bound to be fluctuating and unstable by its very nature because reality is Being-Becoming. It is only through the religion of creative personalities that the nature of God as Being-Becoming can be relatively clearly comprehended. Creative persons apprehend through their religion which fuses into philosophy through the channel of logical consistency that God is the Absolute. They know that the terms 'God' and 'the Absolute' may be used interchangeably: God is the Absolute and the Absolute is God.

CHAPTER XII

THE PROBLEM OF THE ABSOLUTE

The problem of the Absolute had attracted the attention of many philosophers in all ages. Certain philosophers did not say anything specifically regarding the nature of the Absolute, but they only made tacit reference to it. Kant made a sort of tacit reference to the existence of the Absolute. He maintained that, there was the ultimate reality or the noumenon behind the world of actual experience. He pointed out that we could know only the phenomenon, but not the noumenon. In his view, we can know the phenomena as they appear to us through the categories of our understanding, but we cannot know the things as they are in themselves. We cannot transcend our experience in order to have *a priori* knowledge of things-in-themselves. The principles of understanding are universal and necessary in their application to sensible phenomena, but they do not enable us to determine anything regarding the ultimate nature of things. We cannot, therefore, claim to establish an ontology, that is to say, a metaphysics of the ultimate reality. The nature of things-in-themselves or noumena is unknown. The value of the conception of the noumenon, in Kant's view, is not positive, but negative. Its main purpose is to prevent us from assuming that objects of experience are things-in-themselves. The conception of noumenon is a limiting or problematic concept. However, even though Kant maintained that the nature of the noumenon is unknowable he did not deny its existence. Kant's conception of the noumenon suggested the idea of the Absolute to some of the philosophers who succeeded him.

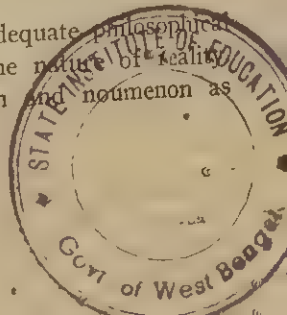
Hamilton, Mansel and Herbert Spencer characterized the Absolute as Unknowable. Hamilton pointed out that the nature of the ultimate reality could not be apprehended through the methods of sciences. In this view, the Absolute is unthinkable because it is unconditioned.¹ To think is to condition; and hence,

¹ 1 *Lectures on Metaphysics*, Vol. I, p. 137.

the Absolute cannot be thought because that would be thinking the unthinkable. Mansel also advanced a similar argument for justifying the unknowability of the Absolute. In his view, when we are conscious of something we distinguish it from other things. Distinction implies limitations of an object as distinguished from other objects. Moreover, consciousness implies relation between the knowing subject and the known object. There cannot be any consciousness without the relation between these two factors. The consciousness of an object implies recognition or feeling of familiarity. It is evident, then, that consciousness of the Absolute is beyond the pale of our knowledge because the latter is unconditioned. Herbert Spencer elaborated the arguments advanced by Hamilton and Mansel. In his view, our knowledge is relative; it cannot go beyond the phenomenon. But the relative character of our knowledge presupposes the existence of the Absolute. The Absolute is the first cause of all things. Finite selves cannot know the nature of the Absolute because their knowledge is relative. The finite mind cannot grasp the nature of the infinite reality. The infinite reality is unknown and unknowable. However, the existence of the Absolute cannot be denied in spite of the fact that the nature of the former cannot be known. He remarked that the views of Hamilton and Mansel involved a great error. He pointed out that the relativity of our knowledge hints at the positive existence of ultimate reality. The very denial of the existence of the Absolute carries with it a tacit affirmation that it exists.² We have indeterminate consciousness of the nature of the Absolute. The ultimate essence of things cannot be known by finite personalities. The Unknowable is something which evokes in us the feelings of awe and wonder. The Unknowable is the proper object of scientific religion for the former will perpetually evoke in us the desire to comprehend the reality which is beyond the scope of our experience.

The idea of the Unknowable is an inadequate philosophical concept. It does not adequately explain the nature of reality. We cannot legitimately regard phenomenon and noumenon as

² Spencer, H., *First Principles*, p. 65.



basically heterogeneous in their nature. Things as they appear are not fundamentally different from things as they are in themselves. Finite personalities generally make the distinction between appearance and reality or phenomenon and noumenon only in the imperfect stages of their knowledge. But, in fact, things as they appear reveal to us something at least of the nature of reality. We can certainly apprehend certain aspects of reality through the channels of the epistemology of sciences. It cannot be said, therefore, that reality or the Absolute is beyond the pale of our knowledge. We can certainly get certain clues to the nature of reality if we have sufficient knowledge of the ultimate constituents of the various phenomena of Nature and their laws of behaviour. It is true that we have not yet been able to fully know about the ultimate constituents of the various phenomena of Nature and the laws of their behaviour. But we cannot say that the nature of reality is unknowable. It cannot be said that it is fundamentally impossible for finite personalities to know the nature of ultimate reality. Scientists have been able to unravel some of the ultimate constituents of the various phenomena of Nature and the laws of their behaviour through the epistemology of sciences. Philosophers commit a grave error when they assert that the nature of reality cannot be known. The views of Hamilton, Mansel and Spencer are self-contradictory for, on the one hand, they maintained that the Absolute was unknowable and indescribable, and, on the other, that it was unconditioned, non-relational, unlimited and the like. Spencer's view reached the height of inconsistency when he characterized the Unknowable as an inscrutable Power.³ If the Absolute was Unknowable, how could Spencer characterize it as a power? Moreover, Spencer's view that the Unknowable is the proper object of religion seems to be an absurd idea. A negative and indeterminate idea cannot be the object of religious experience. An apotheosis of nescience cannot evoke religious consciousness in rational and teleological personalities. Spencer's idea of the Unknowable, therefore, seems to be wrong.

Whereas Kant, Hamilton and others stated the nature of

³ *Op. Cit.*, p. 34.

reality in vague or negative terms Fichte described the nature of reality in positive terms. Fichte transformed Kant's idea of practical reason into an ontological principle. According to Fichte, reality is of the nature of will. The Absolute is an active and a living principle. It is the dynamic and self-determining spiritual process. The thought process of the Absolute is identical with practical reason. The Absolute is an impersonal being. It is the universal active principle. The universal will of the Absolute manifests itself through finite egos. Finite egos are the centres through which the Absolute Ego manifests itself. They are the products of the universal creative principle. The Absolute is infinite and eternal, and hence, its creative activity never stops. It can never exhaust itself by creating finite egos. Ego is not a pure subject, but it is the synthesis of subject and object. It is both the subject and object in the process of its self-affirmation. Likewise ego and non-ego are not opposites, but rather non-ego is the product of ego. The Absolute is basically an ethical being. It realizes its ethical ideal through the creation of finite egos. Finite egos exist for fulfilling the purpose of the Absolute. The Absolute is the pure ethical will whose sole purpose consists in realizing the ethical ideal through finite egos.

Fichte's theory of reality seems to be the expression of his speculative bias. It is difficult to conceive how the impersonal reality can be regarded as an ethical being. The presence of ethical purpose in some being necessarily implies that such a being must have a teleological personality. Moreover, if the Absolute is a creative being as Fichte maintained, then it must be also a creative personality for creativity necessarily implies personality or something analogous to personality. Besides, Fichte erred in holding that the Absolute was of the nature of pure will. Even if it is taken for granted that the Absolute is spiritual or psychic in its nature, it cannot be asserted that the former is of the nature of pure will for an entity which has psychical aspect in it must have other aspects too of psyche in it, viz., cognition and feeling. Furthermore, the Absolute cannot be regarded as an exclusively ethical being for if the former is creator of values it cannot be creator of ethical values alone.

It must be the creator of infinite variety of values including ethical, intellectual and æsthetic values. Finally, in Fichte's metaphysical system finite personalities are reduced to mere puppets in relation to the Absolute for the former are completely dependent on the latter for their very existence and freedom. Fichte's conception of the Absolute, therefore, seems to be philosophically unsatisfactory.

Schelling maintained that the Absolute could not be regarded as either ego or non-ego. According to him, both ego and non-ego have their origin from some higher principle. The Absolute is equipollent from the subject and the object. It is the neutral principle. The Absolute expresses itself through Nature. Nature is pervaded by one principle. In the process of evolution what is implicit in Nature gradually becomes more explicit. Matter and mind are the different stages of the same evolutionary process. Self-conscious mind emerges from the unconscious Nature through the process of evolution. Nothing is static in the whole universe; everything is in constant flux. Reality is dynamic because it is rational and teleological. The ideal and the real, the subject and the object are expressions of the Absolute. In the process of evolution the ideal becomes more real and reality becomes ideal. The subject and object, ideal and real become identical with the Absolute. Such a state of reality can be apprehended through intellectual intuition.

Schelling's conception of the Absolute is vague. It is difficult to conceive an impersonal reality to be the source of the evolutionary process. It is difficult to conceive how a neutral principle can have any creative teleology. Schelling did not clearly explain how and why the evolutionary process took place. A neutral principle cannot have strictly speaking any creative purpose. Schelling's conception of the Absolute, therefore, seems to be philosophically inconsistent.

Hegel maintained that reality was neither purely subjective like Fichte's conception of the pure Ego nor like Schelling's conception of neutral principle, but that it was the all-pervading spiritual principle. According to Hegel, the Absolute is immanent in the universe and does not transcend it. The Absolute is the highest synthesizing principle which unifies the world of

experience. The universe is the self-objectification of the Absolute. The Absolute is self-fulfilled because it is devoid of contradictions. It has no opposition to overcome. But in spite of its self-fulfilled nature the Absolute is self-fulfilling. It differentiates itself in spite of its pure identity. The Absolute Idea is identity-in-difference. The differences are the self-expressions of the Absolute. However, differentiations of reality do not exist apart from the Absolute, but they are the integral parts of the Absolute Idea. The Absolute fulfils its nature through its self-differentiations. Reality divides and distinguished itself through the dialectic process.⁴ The process of self-fulfilment is the principle contradiction. The Absolute realizes itself when the object stands in opposition to the subject. The Absolute is ultimately both subject and object at the same time. The self-fulfilment of the Absolute is a logical process. The Absolute is the dynamic principle. Becoming is the foundation and presupposition of its Being. It is the Absolute Idea. In the dialectic process of the Absolute a triadic movement takes place, viz., the process of movement from a thesis to an antithesis, and by their mutual interaction to a synthesis. A synthesis transcends a thesis and an antithesis. But when a synthesis is reached it again posits itself and asserts a thesis of a new triad. When dialectical movement culminates into synthesis the stage that is arrived at is more perfect and comprehensive than the previous synthesis. Syntheses become more and more perfect and comprehensive through the dialectic process. Each synthesis resolves the contradictions of thesis and antithesis and harmonizes their opposition into a higher unity. The dialectic movement of reality is a logical movement of categories. The three categories of Being, Non-Being and Becoming are the different stages of the same dialectic movement. These categories cannot be separated from one another into water-tight compartments, but they are fundamentally identical and pass into one another. The dialectic process of reality originates from the original identity. Diversity of Nature is the result of the dialectic movement of reality. The dialectic movement is rational. Reason is the common

⁴ Hegel, G.W., *Logic*, edited by Wallace, Vol. II, p. 356.

element of all things in the universe. It works itself out through the universe. It is the universal principle of existence, movement and process. Reality is identical with reason. Material objects are also spiritual in their nature. All that exists is nothing but reason. Hence, the Absolute or reality is self-contained. The Absolute Idea pervades the whole of reality. Pure reason is the basis of all existence. The Absolute Idea finally harmonizes all lower categories into a higher synthesis and resolves their opposition. The Absolute Idea or universal reason is the ultimate reality. Universal reason does not require any further reason to explain it. The Absolute is self-contained. Thought and Being are identical. The ideal and real are correlative terms. The ideal is real, and the real is ideal. The ideality is not something outside reality, but it is identical with it. The real is rational and the rational is real.

Hegel's panlogism is open to various objections. In his view, reality is thoroughly rational. Reality is apotheosized. Perry pointed out that Hegel's absolute idealism was due to his 'speculative bias' for reducing everything to a unity. But the unity and identity of the Hegel's system seems to be a pure abstraction. If we carry his view to its logical conclusion we find that his conception of the Absolute is merely a logical concept. Besides this, the dialectical movement of reality of Hegel's metaphysical system seems to be of a mechanical rather than of a teleological nature. But if the dialectical movement of reality is not teleological in its nature, it cannot be regarded as a rational movement. If reality were rational in its nature, it would not necessarily follow a fixed and pre-determined course, but would aim at the creation of innumerable novel values. Rational movement is not identical with a mechanical pattern of movement. Moreover, it seems that Hegel's philosophical system does not leave room for lower categories for the sole purpose of the Absolute, in his philosophy, seems to consist in transforming lower categories into higher categories. If the Absolute is perfectly rational, it is questionable how the lower categories emerge out of the dialectical movement of the former. Strictly speaking, therefore, there seems to be no room for evil, error and imperfection in Hegel's theory of reality which is thoroughly rational. Croce aptly

remarked that in Hegel's view the entire history of the world was considered to be 'sacred'.⁵ Hence, the dialectical process of reality leaves no room for lower categories. Further, the Absolute being the most perfect reality, it cannot strictly speaking express itself through lower categories. If the Absolute is already self-fulfilled, why does it express itself through lower categories? Hegel's metaphysical system seems to be static in its final analysis which Hegel himself admitted at times. In that case evil, error, ugliness, pain, suffering, change, evolution and so on are reduced to mere appearances. Moreover, Hegel's view seems to be one-sided when he regarded the Absolute as a purely rational Being. But if the Absolute is psychical or spiritual in its nature it must have in its nature the aspects of feeling and will. Besides, the Absolute must have a physical aspect associated with its psychical aspect, for reality as pure thought cannot exist without its association with a psycho-physical personality. Croce aptly remarked that Hegel criticised Schelling for conceiving the Absolute as a substance rather than a subject, but that the conception of reality of the former could not be thought as a subject or more precisely could not be thought at all.⁶ Hegel's philosophical system leaves no room for spontaneous and teleological creation. Everything in Hegel's view of reality is reduced to dead level of logical necessity. William James aptly commented that in Hegel's view of reality everything was reduced to a 'dead level of mere fate'.⁷ Hegel's conception of the Absolute, therefore, seems to be metaphysically inadequate.

Whereas Hegel maintained that the Absolute was immanent in Nature, Bradley maintained that the former transcended the latter. Bradley claimed that we had certain and definite knowledge of Absolute.⁸ He observed that the very denial of the knowability of the Absolute indicated a tacit admission of its knowability.⁹ In his view, reality is one individual experience.¹⁰

⁵ *What is Living and What is Dead in the Philosophy of Hegel*, p. 69.

⁶ *Op. Cit.*, p. 201.

⁷ *Will to Believe*, p. 292.

⁸ *Appearance and Reality*, p. 3.

⁹ *Op. Cit.*, p. 2.

¹⁰ *Essays in Truth and Reality*, p. 343.

The experience of the Absolute is higher than finite experiences. The Absolute is undifferentiated and all-inclusive experience. The difference between the nature of finite experiences and the Absolute experience consists in the fact whereas finite experiences are partial, fragmentary and incomplete, the Absolute is undifferentiated and self-consistent. The Absolute is sentient experience within which everything falls.¹¹ Experience is the ontological stuff which embraces all phenomenal distinctions in a unity. The Absolute experience is beyond the distinction of subject and object. It is experience as such or pure sentence. The Absolute experience is the whole in which distinctions can be made, but in which distinctions do not exist.¹² The nature of reality cannot be further explained. It can be only said that reality is tantamount to pure sentence which embraces all finite experiences in an organic unity. The Absolute is one all-inclusive experience in which all partial diversities are united in a concord.¹³ It is not a mere agglomeration of fragmentary and atomistic elements of experience, but it is a single systematic whole. All phenomenal distinctions are merged in the all-inclusive experience of the Absolute. The Absolute is a single undivided whole. There cannot be any possibility of any thing outside or beyond the all-inclusive whole of the Absolute. All forms of experience are not ultimately real. Nevertheless, each existing entity is a form of the real and is essential for understanding the nature of the whole reality. Existence of every kind is a form of reality even though it may not be the highest reality. The Absolute is the ultimate criterion of truth and reality.¹⁴ Reality is identical with itself. It is devoid of contradictions and discords. It is the principle of non-contradiction.¹⁵ It is the systematic whole which leaves no room for discord and discrepancy. It is the ultimate criterion of truth in the sense that it is self-consistent. Anything that falls short of this criterion is an appearance.¹⁶ Self-discrepant entities are not real. The

11 *Appearance and Reality*, p. 144.

12 *Op. Cit.*, p. 146.

13 *Op. Cit.*, pp. 146-7.

14 *Op. Cit.*, p. 538.

15 *Op. Cit.*, p. 136.

16 *Op. Cit.*, p. 485.

Absolute criterion of truth rules out all inconsistencies. Reality possesses truth as its necessary character. In other words, reality must be identical with truth. Reality as a whole is self-consistent and true. But there are aspects within reality which are fragmentary, partial and incomplete, and which cannot be regarded as absolutely true. Nevertheless, these partial truths are made absolutely true when they are harmonized into a concord in the systematic unity of the whole. The ultimate truth removes all inconsistencies and contradictions. The Absolute is the ultimate criterion of self-consistency and coherence. The absolute criterion cannot be demonstrated by any direct proof, but our mode of judgment indirectly proves that it is positively exists. It denies inconsistency and thereby affirms that it is self-consistent.¹⁷ It has not only internal harmony and coherence, but it is all-inclusive for it excludes nothing to limit and condition it. All partial discords are finally reconciled with the harmonious whole. The Absolute as the self-consistent whole has individuality. Self-consistency is the principle of individuation. The Absolute alone is the genuine individual for it fulfils the criterion of individuality. The idea of a complete system and the idea of individuality are synonymous. However, in spite of the fact that the Absolute is an individual it is not person. The Absolute is not personal because it is personal and yet something more. It is superpersonal.¹⁸ It is the felt totality. It is perfect in the sense that it is all-inclusive, complete and coherent. There is no progress or growth in the Absolute. The Absolute is eternally perfect. It is self-fulfilled. It is not striving towards any goal. There is nothing outside the Absolute towards which it can strive or move. The Absolute which is complete, all-embracing and self-consistent is the only eternally perfect being. It is Being, and not Becoming. It is the Being in which there is no division of content from existence.¹⁹ It is immediate experience in which the various elements are inseparably conjoined, but not connected. It is positive in its nature because it includes everything that possibly exists. Everything that exists contributes to the

¹⁷ *Op. Cit.*, p. 130.

¹⁸ *Op. Cit.*, p. 531.

¹⁹ *Op. Cit.*, p. 162.

harmony of the whole. Finite appearances are transmuted and dissolved into the unity of the Absolute, even though they are not changed alike.²⁰ The Absolute is not pure identity, but it is identity-in-difference. The plurality of appearances are reconciled and perfected in the unity of the Absolute. The Absolute is of the nature of feeling. Feelings involve a sort of togetherness in which the independence of reals is destroyed. Feeling is the ultimate criterion of value, truth and reality.²¹ It cannot be known how finite appearances are reconciled within the 'unity of the Absolute.'²²

Bradley's view is open to many criticisms. He maintained that the Absolute was non-contradictory in its nature, and yet he used finite categories, which were the sources of contradictions, to dilate on the nature of the Absolute. He used the terms 'totality,' 'whole,' 'harmony,' 'unity' and the like to describe the nature of reality. Finite categories cannot be strictly speaking be applied to reality which is beyond all finite criteria of judgment. R. W. Church commented that finite personalities could have no possibility of obtaining knowledge of the Absolute which was beyond all relations with relational way of thinking.²³ H. W. Carr remarked that we could not claim positive knowledge of reality even if it was assumed that we were in the possession of the absolute criterion of reality for until the criterion of reality was empirically tested we could not have knowledge of reality.²⁴ R. D. Mack brought out another point of inconsistency in Bradley's method of thinking. He remarked that in spite of the fact that Bradley considered immediate feeling to be the true method of knowing the Absolute, yet he used an intellectualistic criterion for apprehending the nature of the latter.²⁵ H. W. Knox vehemently criticized Bradley's principle of 'absolute criterion' and tried to show that the latter's principle of non-contradiction was itself self-contradictory. He remarked

²⁰ *Op. Cit.*, pp. 487-8.

²¹ *Op. Cit.*, p. 374.

²² *Op. Cit.*, p. 250.

²³ *Bradley's Dialectic*, p. 158.

²⁴ 'On Mr. Bradley's Appearance and 'Reality', *Proceedings of the Aristotelian Society*, Vol. II No. 3, p. 61.

²⁵ *The Appeal to Immediate Experience*, p. 13.

that if self-contradictory belief was possible, then the principle of non-contradiction was false, and that if, on the other hand, self-contradictory belief was impossible, then the principle had no application. He pointed out that the principle of non-contradiction did not apply to appearance, and consequently that self-contradiction was unthinkable.²⁶ Bradley's distinction between appearance and reality, self-contradiction and non-contradiction is philosophically untenable. He maintained that the Absolute was something more than the totality of appearances. But he could never explicitly say what that something more was. He frequently characterized the Absolute as a 'harmony' and a 'higher and richer kind of experience.' But all such concepts as 'harmony', 'order', 'richer experience' and the like are value concepts. These value concepts are human in their nature; and hence, they cannot be legitimately applied to the ultimate Being which transcends all finite categories. Bradley's conception of the Absolute as a higher and richer kind of experience seems to be nothing but a rhetorical expression.²⁷

Bosanquet's conception of the Absolute is very similar to that of Bradley. In his view, reality is spiritual through and through. Reality is the all-inclusive and individualized system of experience. The harmonious spiritual reality is itself the Absolute. The Absolute is the totality of experience. It is the complete and self-consistent whole in which all differences are preserved in a unity. Finite personalities are transmuted and rearranged in the Absolute.²⁸ The Absolute includes everything within itself. It is the highest truth and value. All contradictions are resolved and harmonized in the Absolute.²⁹ The Absolute has true individuality and value. Finite individuals come to possess their true meaning and value when they become identical with the Absolute. While Bradley dismissed intellectual analysis as the inadequate method of apprehending the nature of reality,

26 'Bradley's Absolute Criterion', *Mind*, N.S. Vol. XIV, p. 216.

27 Sinha, A.K., *The Problem of Appearance and Reality in Sankara and Bradley*, p. 62.

28 Bosanquet, B., *The Principle of Individuality and Value*, p. 373.

29 Bosanquet, B., 'Essay on Life and Philosophy', *Contemporary British Philosophy*, edited by J. H. Muirhead, Series II, p. 67.

Bosanquet emphasized its importance. Bosanquet did not make any sharp distinction between experience and thought. In his view, thought presupposes experience. Thought is universal in its nature. It is not only the essence of mind, but it is also the essence of material objects so that the entire reality is an individualized logical system. The Absolute is a rational system, and its nature can be known if the alternative logical possibilities are properly understood. The logical coherence of the Absolute is identical with the unity of values of the latter. Values pervade the entire reality. The Absolute is impersonal experience. It is not a self or a subject or a personality.³⁰ Being perfect it has neither will nor purpose. It has no teleology in the sense that it is not realizing its purpose through the creation of the universe and finite personalities. It is not directing the cosmic evolution. Values are eternally realized in the Absolute. The Absolute is eternally perfect. The supreme principle of value is wholeness, completeness and individuality. Individuality is the true criterion of value. The Absolute transmutes and absorbs all finite experiences so that they may attain their true meaning and value. Reality as a logical system is not teleological in its nature since all values are eternally realized in it.

Bosanquet's view is open to the same criticisms that were mentioned against Bradley's view. The main point of difference between the views of Bradley and Bosanquet lies in the fact that while Bradley belittled the importance of intellect in apprehending the nature of reality, Bosanquet gave due emphasis to it. However, Bosanquet made a mistake when he asserted that the Absolute was essentially a rational being. If the Absolute is psychical in its nature, it cannot be exclusively intellectual, in its nature to the exclusion of the feeling and volitional aspects of the latter. Further, Bosanquet's view seems to be wrong when he pointed out that the Absolute is identical with value itself. A value has meaning only with reference to a creator or an appreciator of values. A value cannot have full significance without its reference to any personality. Bosanquet's conception

of the Absolute which is impersonal cannot, therefore, be regarded as identical with value.

A. E. Taylor's view of the Absolute has a close affinity with the views of Bradley and Bosanquet. In agreement with Bradley Taylor regarded reality as experience and he accepted Bosanquet's principle of non-contradiction for judging the nature of reality. According to Taylor, reality is experience in the sense that it is immediate feeling or apprehension. Reality is self-consistent. The systematic unity of reality which is internally coherent is itself the Absolute. In opposition to the views of Bradley and Bosanquet Taylor maintained that the Absolute had teleology and that the teleologies of finite personalities were identical with the teleology of the Absolute. It can be said that there is harmony of the teleologies of finite personalities with the teleology of the Absolute on the ground that the entire reality is a systematic unity.³¹ The Absolute as a coherent system of experience is the true individual. However, the Absolute is not a self.³² The conception of the self necessarily involves the idea of the not-self. The Absolute being an internally coherent system is devoid of discordant elements, and as such it is not opposed by the non-self. Therefore, the Absolute cannot be regarded as a self because it is a perfectly harmonious system of experience. Nevertheless, it may be said that the Absolute is a society of selves.³³ The Absolute as a society of selves has some unity and continuity of purpose. In brief, the Absolute is a teleological principle even though it is not self or a person.

Taylor's view suffers from the same difficulties as those of Bradley and Bosanquet. His view is open to certain other criticisms that have not already been pointed out against the views of Bradley and Bosanquet. It is difficult to conceive, for instance, how different selves constituting the Absolute can have one single purpose. The Absolute cannot have teleology because it is impersonal in its nature. If reality is teleological in its nature it must necessarily have a personality for teleology can subsist only in a personality or something analogous to it. Taylor's view of the Absolute, therefore, seems to be philosophically inconsistent.

31 Taylor, A.E., *Elements of Metaphysics*, p. 53.

32 *Op. Cit.*, p. 343.

33 *Op. Cit.*, p. 351.

J. E. McTaggart maintained in agreement with Taylor that the Absolute was a society of selves. In his view, the entire reality is spiritual in its nature. Nothing but conscious beings exists.³⁴ Physical phenomena are appearances. The Absolute is differentiated. It is not a pure unity which engulfs all diversities within itself. It is a plurality of selves. It is the systematic unity of spiritual beings. It is a society of selves though it is not itself a self.³⁵ Finite selves are real and eternal. The Absolute is not a self-conscious personality though it is itself a unity of self-conscious individuals. Unity exists for the parts, but the parts do not necessarily exist for the unity because the parts can exist by themselves. The Absolute is a society of independent and real selves. It is like a college or a club which is composed of self-conscious and independent individuals, and yet it is not itself a person.³⁶ Finite selves are persons because they are unique by virtue of their self-consciousness. They are conscious of their exclusiveness from one another. But the Absolute being all-inclusive it does not exclude anything. It has nothing outside it from which it can distinguish itself. Hence, the Absolute cannot be regarded as a person because it has no not-self. Finite individuals are not lost or dissolved in the Absolute, but rather they retain their uniqueness in the latter.

McTaggart's view is open to certain criticisms. According to him, the Absolute consists of eternally independent selves. Evidently, then the Absolute does not leave any room for physical objects and living organisms. Material objects, plants and animals are not appearances as McTaggart believed. They have real existence even though they do not possess personalities in the strict sense of the term. Besides, finite selves cannot be regarded as differences of the Absolute if they are not aspects of a conscious whole. The parts which constitute the totality of the Absolute cannot be regarded as differentiations of that very totality. This involves a logical contradiction.

Whereas McTaggart made a distinction between the Absolute and God Royce maintained that the Absolute and God were

34 McTaggart, J.E., *Some Dogmas of Religion*, p. 251.

35 McTaggart, J.E., *Studies in Hegelian Cosmology*, p. 58.

36 *Op. Cit.*, p. 86.

identical. According to Royce, the Absolute is a self-conscious personality. It is not purely intellectual in its nature, but it is fundamentally volitional in its nature. God who is identical with the Absolute is an omniscient and all-inclusive being. It can be conceived in advance of any proof that God is a being who possesses knowledge, insight and wisdom.³⁷ He is self-contained pure experience and the source of universal truth. After having enumerated the characteristics of the Absolute or God, Royce raised the question whether the nature of the latter could be apprehended by finite personalities. Royce observed that the nature of the Absolute could not be apprehended by finite personalities for their knowledge was limited. Nevertheless, in the same breath Royce pointed out that the very ignorance of finite personalities of the nature of the Absolute indicated that there was the Absolute which human personalities were capable of knowing.³⁸ According to Royce, the Absolute is a self. It thinks and experiences. It is the concrete unity of eternally realized truth. Its thought is self-fulfilled. The world cannot be causally explained, but the Absolute possesses it as a fact. The Absolute sustains the evolutionary process of the universe. It is a living person and it expresses itself through finite individuals and objects. Values are eternally realized in the Absolute. The Absolute is eternally perfect. The values created by finite personalities have no significance for the Absolute because it is eternally perfect.³⁹

Royce's view is open to certain criticisms. On the one hand, Royce maintained that it was not possible for finite personalities to apprehend the nature of the Absolute due to the limitations of their understanding, and, on the other, he described the nature of the former with the aid of finite categories. This is a definite inconsistency in his way of thinking. Further, Royce emphasized the volitional and ethical aspects of the nature of the Absolute. How could he say with certainty that the Absolute was fundamentally volitional and ethical in its nature when he admitted that finite personalities did not have clear understanding of the nature of the Absolute since their knowledge was limited. But if

³⁷ Royce, J., *Conception of God*, p. 7^c.

³⁸ *Op. Cit.*, p. 19.

³⁹ Royce J., *The Religious Aspect of Philosophy*, p. 483.

it is taken for granted that the Absolute has a personality, on what grounds could Royce say that the former was fundamentally volitional and ethical in its nature? If the Absolute has a personality, it must have other aspects of a personality too apart from its volitional aspect. Moreover, Royce believed that the Absolute was static in its nature which left no room for further series of events within it.⁴⁰ This statement of Royce is inconsistent with his earlier statement that the Absolute is volitional and ethical in its nature. If ethical will does not actually express itself through overt activity, it has virtually no significance. Royce's conception of the eternally self-fulfilled Absolute cannot satisfactorily account for change, evolution, progress and so on. Furthermore, finite personalities are reduced to mere puppets in Royce's metaphysical system because the will of the Absolute works through the wills of finite personalities. They cannot be regarded as unique individuals if they are mere conduit pipes of the will of the Absolute. In its final analysis Royce's conception of the Absolute has the semblance of a 'block universe.'

H. Rashdall gave a new conception of the nature of the Absolute. According to him, the Absolute is the unity of God and finite selves. God is not infinite, but he is a finite personality. He is not identical with the Absolute. The Absolute is not a self-conscious personality, but it is an impersonal unity of God and finite selves.⁴¹ It is infinite and all-inclusive, but it is not itself a self-conscious personality. All separate 'centres of consciousness' are the manifestations of a single Being.⁴² The Absolute is a totality of God and finite selves.

Rashdall's view is inconsistent in many ways. If the Absolute is an impersonal unity, how can it express itself through finite 'centres of consciousness'? How can a non-teleological pure Being create an eternal and omniscient God? If God is characterized as 'eternal' as Rashdall does it, then how can it be said that the former was created by the Absolute for the term 'eternal' by its accepted definition means beginningless and endless existence

40 Royce, J., *The World and the Individual*, Series II, p. 369.

41 Rashdall, H., *The Theory of Good and Evil*, Vol. II, pp. 240-41.

42 Rashdall, H., 'Personality: Human and Divine', *Personal Idealism*, edited by Henry Strat, p. 391.

of some reality. Further, if the Absolute is nothing more than a totality of finite selves and God, how can it be regarded as the creator of the latter? Moreover, if the Absolute is nothing but an aggregate of finite selves and God, where and how are material objects and lower forms of living organisms sustained? Rashdall's view, therefore, seems to be philosophically inconsistent.

James Ward also regarded the Absolute as a totality of finite spirits and God. He repudiated the conception of an all-inclusive and monistic Absolute because in such a view the individualities of finite selves were obliterated within the absolute unity. In his view, the doctrine of absolute monism is like a lion's den where all pluralities disappear.⁴³ It is very difficult to find the existence of diversities in the Absolute, if the latter is an all-absorbing unity. Ward admitted that there was unity and harmony amongst finite selves, but he repudiated the idea that the latter were completely annulled and dissolved in the Absolute. He maintained that finite God and finite selves were preserved in the Absolute with their unique individualities. In his view, God and finite spirits constitute the Absolute. The Absolute has neither personality nor self-consciousness.⁴⁴ It is an impersonal aggregate of conscious personalities.

Ward's view is open to the same objections that were levelled against Rashdall's view. However, there are a few objections which must be mentioned specifically in connection with Ward's conception of the Absolute. Ward maintained that finite selves were arranged in a hierarchy with God as the final limit since the latter was the *primus inter pares*. It appears, therefore, on the analysis of Ward's view that the Absolute has definite boundaries determined by the termini of the series of finite selves. It is obvious, then, that in Ward's metaphysical system the Absolute is finite in its nature. If the Absolute is finite, the question immediately arises: what is outside this finite reality? Ward's conception of the Absolute which is identical with a hierarchy of selves, therefore, seems to be philosophically inadequate.

In the preceding few pages the views of a few philosophers

⁴³ Ward, J., *The Realm of Ends*, p. 37.

⁴⁴ *Op. Cit.*, 313.

on the nature of the Absolute were discussed and they were found to be unsatisfactory in some respects or the other. We shall now make a brief reference to the views of a few philosophers who said something on the nature of reality even though they did not say anything on the nature of the Absolute.

Whereas idealists regard reality as essentially spiritual, mental and divine, materialists deny the existence of God, spirit, soul and the like altogether. Marx, an ardent advocate of materialistic philosophy, gave a thoroughly materialistic interpretation of reality. He drew inspiration from Hegel whose dialectical method he accepted, and abandoned his idealistic interpretation of reality. Marx maintained that reality was material in its nature and that it was moving in a dialectical manner. The theory of dialectical materialism of Marx was developed and elaborated by Engels, Lenin, Stalin and others. According to the theory of dialectical materialism, nothing in the universe is final, absolute, divine and sacred. There is no conscious purpose in the evolution of the world. Everything in Nature is relative, changing and transitory. Material motion takes place due to the struggle of opposites. Stalin observed that evolution of Nature was not a harmonious process, but rather it took place through struggle of opposites which was inherent in things.⁴⁵ Contradictions in Nature are overcome through the process of material motion. But if contradictions are once for all disposed of that would lead to absolute truth and terminate the history of the world.⁴⁶ Laws of material motion operate blindly in all aspects of Nature. Material movement has objective existence and it is reflected in human consciousness.⁴⁷ Consciousness or psyche does not exist independently of the human brain, but the former is a product of the latter.⁴⁸ Consciousness is only an *epiphenomenon* of matter. Thought originates from actual experience. For instance, the concepts of numbers have been derived from actual counting on fingers.⁴⁹ Thought is due to

45 Stalin, J., *Problems of Leninism*, p. 573.

46 Engels, F., *Ludwig Feuerbach*, p. 18.

47 Lenin, V.I., *Materialism and Empirio-Criticism*, pp. 337-8.

48 Engels, F., *Ludwig Feuerbach*, p. 30.

49 Engels, F., *Anti-Dühring*, p. 61.

reflection of matter on human brain. There is transition from quantitative changes to qualitative changes, and from old qualitative states to new qualitative states through the dialectical movement of material reality. There is perpetual ascendancy from lower to higher categories in the course of the dialectical movement of material reality. In brief, reality is material in its nature.

It is an undeniable fact that reality has a material or physical aspect for emphasizing which the credit is due to Marx and his followers. But an exclusively materialistic interpretation of reality is onesided. If material motion is to retain its 'rational kernel', it must recognize the existence of a teleological principle to give orientation to the former. The dialectical movement of material reality presupposes the existence of some sort of psychical or teleological principle without which logical movement of the former is impossible. The views of materialistic philosophers that mind was an *epiphenomenon* of matter is as dogmatic as the views of idealists who maintained that matter was the *epiphenomenon* of mind. Marx and his followers overdid their job when they over-emphasized the physical aspect of reality.

A. N. Whitehead rejected both exclusively idealistic and exclusively materialistic interpretations of reality. According to him, reality is made up of actual entities or actual occasions. Actual entities are ultimate realities. Each actual entity has a physical pole and a mental pole. It is a subject in the sense that it is a unity of subjective experience and it is an object in the sense that the superject emerges from the object. Subject and object are the two aspects of the same reality. Actual entities as moments of experiences perish and the impressions of perishing entities are transmitted to succeeding ones. Reality is a continuous process of change. The dynamic process of reality is oriented towards creativity. There is continual transcendence of actual entities which leaves room for ever-changing novelty and originality. A new thing can arise only when an old one has made room for it by disappearing from the scene. An actual entity dies in order to be born again in the succeeding entity.⁵⁰

⁵⁰ Whitehead, A.N., *Nature and Life*, p. 38.

Actual entities perish, but they do not change. Thus, there is no motion in an actual entity; it is where it is⁵¹ Eternal objects are the ingredients or characteristics of things. They are the various potentialities for the specific determination of acts. An actual entity is a particularization of an eternal object. There is ingression of an eternal object into an actual entity.⁵² Particulars perish, but eternal objects or essences persist. Eternal objects are not entities, but they are eternal principles or pure possibilities. They have existence independent of actual entities. Creativity is nothing but actualization of potentiality.⁵³ God has established the original world-order and set the rules under which everything operates. There is no possibility of chaos in the world as God is immanent in it.⁵⁴ He is the embodiment of good element in it. He tries to establish the best possible world by struggling against evil aspects of the universe. He is the infinite super-actual entity in which actual entities have their being.

Whitehead's view is open to certain criticisms in spite of the fact that he tried to arrive at a consistent theory of reality. His view seems to be dogmatic when he stated that God was the source of world-order, embodiment of goodness and fighter against the forces of evil and so on. If God is the author of the world-order and the law giver of actual entities, how can Whitehead account for the objective existence of evils, errors, imperfections and the like in the universe? The conception of God who is struggling against evil does not seem to be philosophically convincing. Moreover, Whitehead's conception of actual entities as perishing entities does not seem to be scientifically tenable because stability, identity and continuity cannot be satisfactorily accounted for from the standpoint of such a view. Further, it is difficult to conceive how sustained purpose can be adequately explained if reality is considered to be flux of perishing actual entities. Besides, it is difficult to conceive how forms, patterns and essences of objects and individuals always are and they have independent being other than actual entities. If eternal

51 Whitehead, A.N., *Process and Reality*, p. 113.

52 Whitehead, A.N., *The Concept of Nature*, pp. 143-4.

53 Whitehead, A.N., *Adventures of Ideas*, p. 230.

54 Whitehead, A.N., *Process and Reality*, p. 169.

objects have reality of their own, what is their mode of existence in spatio-temporal continuum? Whitehead could not give a satisfactory answer to this question. Finally, Whitehead's conception of reality as an organic unity seems to be inadequate for one cannot account for independence and freedom of finite individuals in such a scheme of existence.

Problems of philosophy, particularly ontological problems, were gradually relegated to the background due to the tremendous impact of the rapidly developing pure sciences since the beginning of the twentieth century. Two conspicuous tendencies were found in recent philosophy. One group of philosophers became more interested in human problems than on problems of reality and the other group of philosophers were mainly concerned with showing the meaninglessness of the propositions of metaphysics rather than making any positive contribution to human knowledge.

Existentialism, which has lately swayed a group of intellectuals of the contemporary period, is more concerned with solving the problems of human personalities in relation to the world rather than with solving the fundamental problems of the world itself. It has very little interest in the theoretical problems of reality and expressions thereof. According to this theory, existence is prior to being or essence. There is no pre-established pattern of human existence. Jean-Paul Sartre, one of the contemporary existentialist philosophers, maintained that human existence had no meaning *a priori*, but that human personalities gave meaning to it by their free choice.⁵⁵ Some of the existentialist philosophers deny the existence of the Absolute or God. The main theme of the existentialist philosophy centres round the problems of human personality and human freedom. Existentialism has, therefore, a strong humanistic tendency. It seems that the existentialist philosophers abandoned their attempts to tackle the problems of reality mainly due to their defeatist mentality produced by the futility of earlier philosophers to give satisfactory answers to the various problems of reality. It is possible that this movement in philosophy may be as short-lived as the Pragmatism of William James and Behaviourism of J. B. Watson.

Another movement which was launched against traditional philosophy with a greater belligerent attitude than that of Existentialists was by Logical Positivists. The main task of Logical Positivists consists in analysing the sentences of metaphysics and showing that they are meaningless. According to them, all statements which are made on the nature of reality from the philosophical point of view are meaningless because they have not been empirically verified. Ludwig Wittgenstein observed that all flaws in the conclusions of traditional philosophy were due to unsatisfactory use of language.⁵⁶ He, therefore, tried to find out the conditions of accurate symbolism and logically perfect language in which sentences would have precise and clear meaning. In his view, in a logically perfect language there must be some correspondence between the structure of a sentence and the structure of a fact. The object of philosophy is to clarify and elucidate propositions in spite of the fact that atomic facts of the world which are pictorial in their nature cannot be fully expressed in words. Rudolf Carnap went a step further than Wittgenstein and suggested that philosophy should be replaced by logic of science the task of which should be to logically analyse the sentences of sciences.⁵⁷ A. J. Ayer suggested that philosophers should not speculate on the nature of first principles.⁵⁸ In his view, philosophers are not in a position to assess the value of any scientific theory.⁵⁹ In agreement with Carnap Ayer also suggested that the function of philosophy was not to speculate on the conclusions of sciences, but that its aim was to develop into a logic of science.⁶⁰ It cannot be denied that Logical Positivists performed an important task of purging philosophy of its defects and showing the absurdity of those metaphysical systems which were far removed from Nature. But unfortunately Logical Positivists over-did their task with as perverted enthusiasm as Freud did the same concerning his theory of pan-sexuality. Philosophy in the sense of speculative adventure precedes as well

56 *Tractatus Logico-Philosophicus*, p. 63, 4.003.

57 *Logical Syntax of Language*, p. 277.

58 *Language, Truth and Logic*, p. 51.

59 *Op. Cit.*, p. 152.

60 *Op. Cit.*, p. 153.

as follows all scientific theories. There could be hardly any progress in human knowledge if sciences remained mainly on the correlational level and were not followed by any speculative adventure. If propositions which are not empirically confirmed are meaningless, then what would be the fate of Mendeleev's speculation concerning the Periodic Law, Einstein's theory concerning curvature of light, Yukawa's guess about meson, speculations of Einstein, Eddington, de Sitter and others on the space-time structure of the universe and so on. It may be said here without giving any detailed criticism of Logical Positivism that this movement is destined to be a brief interlude in the intellectual drama of mankind because its contribution to knowledge is too trivial.

We shall now give our concluding remarks on the nature of the Absolute from our philosophical standpoint. We get glimpses into the nature of reality through the apprehension of the nature of existence of different forms through various methods of knowledge. The distinction which is very often made by philosophers between 'appearance' and 'reality' is misleading because appearances are not different from reality, but rather they are the expressions of the latter. The term 'existence' is preferable to the term 'appearance' because the former is more expressive than the latter. The existence of various forms is undeniable because we are aware of each form of existence through different methods of knowledge. It cannot be said, however, that reality is compartmentalized into fundamentally different forms of reality, such as matter, life, mind and so on. It was shown in the earlier chapters that there is a definite link between different phenomena of Nature. It is true that reality is differentiated, but fundamental constituents of reality have identical nature. We mentioned in the earlier chapters that all phenomena of Nature were composed of atoms and subatomic particles. Certain physicists were doubtful whether the fundamental particles could be called fundamental at all because larger and larger number of subatomic particles were continuously being discovered through progressive analysis of matter. A hypothesis was suggested in order to avoid this difficulty that the entire reality was composed of electromagnetic energy. We suggested that reality consisted of psycho-physical entities. Psycho-

physical entities are the ultimate constituents of reality. An attempt was made to show in the earlier chapters that every form of existing entity in Nature has spatial position and teleological dynamism. We pointed out that the spatial position of an existing entity represented its 'physical' aspect and its teleological dynamism represented its 'psychical' aspect. The physical aspect of a psycho-physical entity is identical with Being and psychical aspect is identical with Becoming. A psycho-physical entity is at once Being-Becoming. It is an undeniable fact that every phenomenon of Nature has physical aspect and a teleological aspect which gives empirical confirmation to our theory that the ultimate constituents of reality are psycho-physical entities. Psycho-physical entities are infinite in number and they are uncreated and indestructible. They have identical natures both from the qualitative and quantitative points of view. Differences between different forms of existence are due to different modes of organizations of psycho-physical entities. Organizations of psycho-physical entities may be arranged in a hierarchy from the most simple to the most complex forms. The simplest forms of organizations of psycho-physical entities are subatomic particles and the most complex forms of organization of psycho-physical entities is the Absolute. Our apprehension of the nature of the Absolute as the most complex organization of psycho-physical entities is primarily through empirical and inferential methods of the knowledge. Complexity of organization of psycho-physical entities necessarily implies richness of meaning of the former. Complexity of an organization is identical with conflux of psychical aspects rather than of physical aspects of psycho-physical entities because meaning, purpose and value refer to psychical aspects of the latter. An attempt was made in earlier chapters to show that there was a necessary correlation between the complexity of organization of psycho-physical entities and its meaning, purpose and value. The Absolute which is the most complex organization of psycho-physical entities has the most well-defined creative purpose. Its existence has maximum value for finite personalities which the latter try to apprehend as clearly and comprehensively as possible. However, when we try to apprehend the nature of the Absolute primarily from the intuitive

point of view we know that it is supremely creative in its nature. Creativity is the fundamental law of reality. There is correlation between creativity and complexity of organization of psycho-physical entities. The Absolute which is creative *par excellence* is also, the most complex organization of psycho-physical entities. There are different levels of creativity corresponding to different degrees of complexity of various organizations of psycho-physical entities. Subatomic particles have the least degrees of creativity. Simple forms of living organisms have greater degrees of creativity than those of physical phenomena, and human personalities have still greater degrees of creativity than those of simple forms of living organisms. Our theory of universal law of creativity tallies with actual facts of experience. It is found through actual observation of various phenomena of Nature that different degrees of creativity are proportional to different degrees of complexity of various organizations of psycho-physical entities. It is evident, then, that complexity of organization of psycho-physical entities and creativity are co-existent.

It was shown in earlier chapters that the fundamental characteristics of various observables of Nature, *viz.*, physical phenomena, living organisms and human personalities were known by various methods of knowledge and empirically confirmed to a very great extent. We reached the 'take-off' stage of knowledge while discussing the nature of infinite space-time. That was our first ascent over the empirical method of knowledge. However, our speculative flight into the realm of the empirically unknown in connection with our view of infinite space-time was not completely absurd because the hypothesis concerning the latter is naturally suggested to any thoughtful person as soon as it is established on scientific grounds that our universe is finite. It is not unlikely that there is infinite space-time outside our finite universe and that there are infinite number of possible universes like our own in the former. The problem of the Absolute as an incessant creator of cosmic values naturally suggests itself to our minds to account for the existence of infinite possible universes outside our finite universe. Our speculation concerning the nature of the Absolute, therefore, has an empirical and a rational foundation. This was our method of approach to the

problem of the Absolute primarily from the empirical and rational points of view. However, it was revealed through our intuitive apprehension of reality that creativity was the universal law of reality which expressed itself through all forms of existence. The very fact that psychical aspects of psycho-physical entities are indetical with dynamism, meaning, value, purpose and creativity, it necessitates the existence of the Absolute as creative *par excellence* through the conflux of the former. It cannot be said, however, that in order of time psycho-physical entities existed first in a state of isolation and then the Absolute came into existence through the maximum complexity of psycho-physical entities. The existence of the Absolute by virtue of maximum conflux of psychical aspects of psycho-physical entities is necessary and self-evident. The maximum conflux of psychical aspects of psycho-physical entities is beginningless and endless. Psychical aspect of psycho-physical entities being indetical with creative teleology the superjection of creativity of an organization through the conflux of the former has incessant and spontaneous dynamism, and the physical aspect of psycho-physical entities of such an organization being immobile and stable try to inhibit its superjection of creativity and give spatial locations to the flux of creativity in the form of values. The perennial advance of the superjection of creativity of the Absolute is inhibited and actualized in the form of cosmic values through the stabilizing principle of physical aspects of psycho-physical entities in the organization of the Absolute. The superjection of creativity is beginningless and endless, but the actualizations of its incessant creative ideas in the form of cosmic values take place through finite space-times. The Absolute includes finite space-times though it is itself infinite and eternal.

The creativity of the Absolute is so supremely original that each value that it creates is novel and unique. Each cosmic value is so unique and original that it may not be possible for a finite observer to apprehend the exact nature of cosmic values through the epistemology of sciences other than the one of which he is an evolute. It may not be even possible for a finite observer to make analogical inference^a about the exact nature of cosmic values other than the one of which he is an evolute because cosmic

values are mutually different from one another in their respective uniqueness. The superjection of creativity of the Absolute is free and spontaneous. The creative advance of the Absolute is indeterministic. The creative teleology of the Absolute is without any pre-conceived plan or end. Even the Absolute itself does not precisely foreknow what form of cosmic value it is likely to create at a given time in future. Creation is identical with intuitive apprehension of an idea which is original, novel and unique. Even the Absolute itself is surprised by its unique creations. Its creation is not tantamount to the realization of a particular goal that it sets before itself. Its intuitive apprehension of an idea is identical with its creation. The creativity of the Absolute does not suffer from the defect of finalism. Its creativity is free, spontaneous, indeterministic and incessant. The physical aspects of psycho-physical entities in the organization of the Absolute offer resistance to the superjection of creativity of the latter and the ideas that it intuitively apprehends it actualizes in the form of values through the stabilizing property of the former. The physical aspects of psycho-physical entities in the organization of the Absolute give stability, form and spatio-temporal location to the creativity of the latter when its ideas are actualized in the form of cosmic values. There is slight decadence in the creative intuition of the Absolute when its idea is actualized in the form of a cosmic value in the sense that its spontaneous flow of creativity is interrupted and stabilized in the form of a cosmic value. The richness and subtlety of a cosmic value is slightly more decadent than a particular idea itself that the Absolute intuitively apprehends because the expression of an idea in the form of an actualized value involves comparatively lesser degree of perfection and spontaneity than its corresponding idea. However, slight decadence in the richness and subtlety of ideas in the form of cosmic values constitutes a necessary aspect of the creative nature of the Absolute. The incessant creativity of the Absolute takes place through transcendence of decadence at each stage of actualization of an idea in the form of a value. But the degrees of decadence of ideas in the process of transformation into cosmic values are so negligible that hardly anybody else but the creator itself can

appreciate the difference. Cosmic values that the Absolute creates are not absolutely coherent, orderly and symmetrical and harmonious. There are certain aspects of disorderliness, asymmetry and disharmony alongside order, symmetry and harmony in each cosmic value. The aspects of natural disorder, disharmony and asymmetry are contributed by the psychical aspects and the aspects of natural order, harmony and symmetry are contributed by the physical aspects of psycho-physical entities in the organization of the Absolute to its cosmic values and evolutes thereof. Moreover, indeterministic laws are the expressions of psychical aspects and deterministic laws are the expressions of physical aspects of an organization of psycho-physical entities. Cosmic values and various evolutes thereof are, therefore, explainable both by deterministic and indeterministic laws. Consequently, cosmic values and their various evolutes can neither be explained exclusively by deterministic laws nor exclusively by indeterministic laws. Indeterministic laws are as important as deterministic laws in explaining the behaviour of various phenomena of Nature. Deterministic and indeterministic laws are, therefore, not mutually incompatible, but they are the expressions of the same reality. But indeterministic laws have always a tendency for surpassing and transcending deterministic laws. We find that amongst various phenomena of Nature the comparatively simpler organizations of psycho-physical entities are governed more by deterministic laws than by indeterministic laws and the comparatively more complex organizations are governed more by indeterministic laws than by deterministic laws. In other words, in the hierarchy of various forms of organizations of psycho-physical entities the progressively more complex organizations of psycho-physical entities are governed more by indeterministic laws than by deterministic laws, such as the behaviour of human personalities is governed more by indeterministic laws than by deterministic laws compared to the behaviour of simple living organisms and physical phenomena. The superjection of creativity of the Absolute expresses itself through indeterministic laws, but the spontaneous creative advance of the latter is intermittently arrested and actualized in the form of cosmic values through deterministic laws. The superjection

of creativity of the Absolute can never completely evade being arrested and actualized in the form of cosmic values because, the physical aspects of psycho-physical entities in the organization of the Absolute are always there to inhibit the spontaneous advance of the former. Nevertheless, certain aspects of disorderliness, asymmetry and spontaneity and the like of the superjection of creativity of the Absolute invariably ingress into cosmic values together with orderliness, symmetry and the like that the latter creates. Disorderliness, disharmony and asymmetry constitute the indispensable aspects of all phenomena of Nature. The overthrow of parity principle and entropy increase of physical phenomena, gene mutations of living organisms and the spontaneity and unpredictability of behaviour of human personalities are some of the instances which bear testimony to the fact that asymmetry and indeterminacy are there in all phenomena of Nature. The instances of harmony, symmetry and the like in various phenomena of Nature are too common. But perfect order, harmony and symmetry in any phenomenon of Nature is impossible in principle because psychical aspects are invariably there in any form of existence which contribute disharmony and asymmetry to it. The difference between one form of existence and another consists in the variations of proportion between orderliness and disorderliness, symmetry and asymmetry and so on of the former. The aspects of asymmetry and indeterminacy in an existence represent its vital, dynamic and creative aspects. Asymmetry and indeterminacy are the necessary expressions of creativity of any form of existence. Whenever there is creative advance of any form whether it is in an atomic system, or a cell or a human personality or the Absolute it necessarily and invariably expresses itself through asymmetry and indeterminacy. Asymmetry is as important aspect of an aesthetic object as is its symmetrical aspect. The beauty of an æsthetic object is marred if there is perfect symmetry and rigidity in its pattern, but its beauty is considerably enhanced if the tension of its rigid pattern is released by its spontaneous flexibility of asymmetry. A value is almost dead if its symmetry is so coherent and well-ordered that asymmetry is almost negligible in it. It is the spontaneous and natural asymmetry and indeterminacy which gives vitality to a

value. The Absolute which has the maximum possible conflux of psychical aspects of psycho-physical entities in its organization and which is supremely creative has maximum possible spontaneity, indeterminacy and asymmetry and the like in its nature and its creative expressions. It is on account of simultaneous existence of symmetry and asymmetry, orderliness and disorderliness, harmony and disharmony and so on in all cosmic values and their evolutes that both deterministic and indeterministic laws hold good in explaining the behaviour of the latter.

The Absolute is an infinite and eternal person. It is infinite in the sense that its field of comprehension is infinite. The maximum conflux of psychical aspects of psycho-physical entities in the organization of the Absolute and the latter's infinite field of comprehension are coexistent. The Absolute is eternal in the sense that its creativity is beginningless and endless. It intuitively apprehends ideas and actualizes them in the form of cosmic values. It is, therefore, eternal in the sense that its creativity is incessant which takes place with maximum possible velocity. Finally, it is a person in the sense that it is creative. In our view, a person is creative by definition. An organization of psycho-physical entities which creates values with sufficiently rich and subtle meaning must have a personality. The personality of the Absolute is supremely perfect because it is creative *par excellence*. The incessant creation of novel, original and unique values is the expression of the Absolute's supremely creative nature. Cosmic values are the expressions of the overflow of bliss in the personality of the Absolute. Bliss in the personality of the Absolute is identical with the feeling of perfection produced by its supremely creative nature.

In sum, the Absolute, its incessant creation of cosmic values and evolutes thereof, its infinite field of comprehension and the ultimate constituents or psycho-physical entities of various organizations constitute reality. Reality is not pure identity. It is not homogeneous throughout. It is differentiated and diversified. Differentiations of reality are not necessarily organically related. There are various types of organizations of psycho-physical entities. They have relative independence and they exist in mutual isolation from one another. The Absolute

which is the creator of cosmic values is not immanent in them, but rather it transcends them. The creative teleology of the Absolute ingresses into the cosmic values at the time of the creation of the latter, but it neither directs the later processes of the past cosmic values which persist as souvenirs nor their évólutes. The evolutionary process takes place in the past cosmic values in accordance with the teleological principles that the latter partook of from the Absolute when they were created. The various organizations of reality do not constitute an organic whole, but rather most of them have relative independence. The contacts between major organizations of psycho-physical entities take place through mutual apprehension and appreciation.

The theory of reality that we have outlined in this work is not metaphysical in its nature in the sense that it is not far removed from Nature. We have made persistent efforts to grapple with reality through all possible methods of knowledge which are available to us. We took into consideration the facts of experience and the results of pure sciences which considerably aided us in constructing our theory of reality particularly in its observational aspect. For instance, the fundamental constituents of various phenomena of Nature, such as subatomic particles, electromagnetic fields, genes and so on and the laws of their behaviour, such as the laws of attraction, repulsion, mutation, evolution and so on are known by the methods of natural sciences and the structure of human societies and the laws of movement of human history and culture are known by the methods of social sciences. Facts of sense experience and the data of pure sciences provided us with clues regarding the characteristics of various phenomena of Nature which corroborated with our theory of the cosmos. The theory that we outlined in this work is not, therefore, a metaphysical theory of reality, but it is a philosophy of Nature or the world. The view that we have tried to present here is not a mere synthesis of the facts of sense experience and the data of sciences, but it is the corroboration of truths which were revealed to us through faint glimpses of intuitive apprehension. We tried to show that the epistemology of sciences confirms and strengthens our philosophical point of view. We characterized the last three chapters as 'problems' because they

could not be corroborated by the epistemology of sciences. Our main purpose in this work was to hint at the meaning of the various phenomena of Nature and to suggest a view that creative teleology is the steering principle of all phenomena of Nature. That is the reason why we have given the title: 'A World-View' to this work. Our theory of reality will have, we believe, a heuristic value for future scientists. It is our strong conviction that new information regarding various phenomena of Nature will come to light if axiology in the general sense is taken into consideration in the epistemology of sciences. In other words, scientists must explain the meaning, value and purpose of constructs with which they are mainly concerned. At present scientists mainly explain the nature of the fundamental constituents of various phenomena of Nature and the laws in accordance with which they behave, but they do not clearly explain *why* the various phenomena of Nature behave in their characteristic ways. However, it is our hope that future scientists will be able to explain why various phenomena of Nature behave in their characteristic ways when they incorporate in their methodologies of investigation the axiology in the general sense. It is possible that in future sciences may get amalgamated with philosophy through the channels of axiology in the general sense. In this work we have given the significance of the various conclusions of sciences from our philosophical point of view. It is not unlikely that in future scientists may themselves testify what we have suggested in this work. The hormic or purposive psychology of Willaim McDougall is a pioneer work in this direction.

The theory of reality which we have suggested in this work seems to be quite consistent within its general framework. Our philosophical theory gives a more comprehensive perspective of reality compared to the perspectives of reality which are generally found in earlier philosophical theories. Most metaphysicians gave partial views reality and they wrongly identified their fragmentary views of reality with reality itself. For instance, Heraclitus and others believed that reality was Becoming; Parmenides and others believed that reality was Being; Zeno and others believed that reality was completely filled with no

empty space; Mādhyamika Buddhists and others believed that reality was empty or void; Hegel and others believed that reality was spiritual or psychic; Marx and others believed that reality was material; Shankara and others believed that reality was undifferentiated; Leibniz and others believed that reality was differentiated; Bergson and others believed that reality was creative without any purpose and so on. None of these metaphysical theories could give a comprehensive perspective of reality. Compared to the metaphysical theories mentioned above our philosophical theory is sufficiently comprehensive and consistent. In our view, reality is psycho-physical, Being-Becoming, differentiated, teleological, creative, filled and unfilled. Our philosophical theory, therefore, cannot be strictly speaking branded with any specific type of 'ism'. The various philosophical theories ending with the suffix 'ism' generally give partial views of reality. We have tried in this work to bring about a reconciliation between various philosophical theories, such as idealism and materialism, determinism and indeterminism and so on. Strictly speaking our philosophical theory is not an interpretation of the nature of reality, but it is a discovery however faint and fragmentary it may be of the nature of reality. In our view, it is possible to have a comprehensive perspective of reality through clear comprehension of the nature of psycho-physical entities. To begin with one may get clue to the nature of psycho-physical entities sufficiently clearly through the comprehension of the psycho-physical nature of personality and the principle of individuation. One finds a wonderful corroboration of what one discovers in the psycho-physical nature of one's personality in various phenomena of Nature. The ultimate constituents of human personalities and other phenomena of Nature and their fundamental laws of behaviour are not basically different from those of the ultimate reality of which the former are expressions. The meaning, purpose and value of reality is sufficiently clearly mirrored in human personality.

EPILOGUE

The theory of reality which we have briefly outlined in this work will have, we believe, a direct bearing upon all facets of human existence and knowledge. Our philosophical theory will have the greatest value when it is given a mathematical form. The existing philosophy of science will take a new shape when the fundamental principles of axiology in the general sense are incorporated in the epistemology of sciences. We further believe that if the symbol of intuitive apprehension is incorporated in the space-time equation, as it was suggested earlier, it will certainly mark the zenith of perfection of our contemporary 'space age'. Moreover, with the establishment of nature of infinite space-time with the aid of the new epistemology of sciences certain aspects of the nature of reality will come to light. The impact of our philosophical theory will be not only on natural sciences, but also on humanities. We believe that the interpretations of human history and civilization which were hitherto given were either wrong or inadequate. Many such interpretations of human history produced the ill-effects of mutual distrust, hatred and bigotry. When our philosophical theory is applied in detail to the study of human history, civilization and culture better understanding will prevail in human societies leading to abiding peace and enhancement of creative atmosphere. Our philosophy of human history will throw light upon the nature of the State. Most theories of the State are one-sided and inadequate and they very often give rise to national prejudices and international tensions. The world could never be made safe for democracy even though many wars were fought for safeguarding democracy. Democracy as a socio-political theory has a faltering existence not because the theory itself is wrong, but because some of the fundamental premises on which the theory is based are defective or inadequate. Democracy does not merely stand for safeguarding individual liberty and dignity of human personality, but it also stands for guaranteeing a creative atmosphere in which everybody will have the opportunity to create values and appreciate those that are created by others. Our theory of the

State will have a firm foundation on a theory of creative democracy. The philosophy of law has a close connection with the philosophy of the State. It aims at the establishment of a creative-appreciative atmosphere in human society through the enforcement of certain culturally accepted rules for restraining wild growth of arbitrariness of human behaviour. In our view, therefore, philosophy of law must take into consideration the principles of creation and appreciation. Economic philosophies are generally inadequate because they are far removed from the philosophy of reality and philosophy of life. The ends towards which economic theories are oriented lack intrinsic value because in most of such theories there is neither a clear conception of the nature of human personality nor of human culture. Theories of economics generally concentrate so much on the means of bringing about affective economy in a social structure that they generally lose sight of ends. Instances are not wanting in contemporary systems of economy in which the means of human welfare are confused with their ends. A philosophy of creative economy will take into consideration the creative nature of human personality and the creative-appreciative nature of human culture. Our philosophy will also have bearing upon the principles of education. Most theories of education which have been propounded so far were defective and inadequate because such theories had neither a clear conception of the nature of human personality nor of the principles of education. Our philosophy of creative education will take into consideration the creative-appreciative nature of human personality and it will aim at the creation of a cultural atmosphere in a society. Finally, our philosophy of religion which will primarily study the nature of personal contact of finite personalities with God through altruistic affect will have a salutary effect especially upon creative personalities who will be saved from the fear of regimentation of behaviour of congregational religions. These are some out of many areas of human existence to which our philosophical theory will have direct application. Our philosophical theory of creative-appreciative reality will liberate sensitive human personalities from all forms of dogmatisms which have been holding the latter with octopus grip for centuries and it will forever make

their minds receptive for apprehension and appreciation of any new information that may come to light in future.

Finally, it may be said that reunion of philosophy and science is of vital importance for effective existence of both. Philosophy without sciences is ineffective and sciences without philosophy lack clear and comprehensive vision. Sciences which have been weaned from philosophy, their mother, wish to explore various phenomena of Nature by their own efforts, but being unaided by general axiology, which is the science of meaning and value, they are unable to have clear comprehension of Nature, and consequently they ultimately turn to philosophy for guidance and solace. In spite of the fact that sciences wish to explore various phenomena of Nature unaided by philosophy there is no love lost between sciences and philosophy. However, applied sciences and technology, which are the pampered offspring of pure sciences, ignore the importance of philosophy and vainly parade their spectacular achievements. It is an undeniable fact that applied sciences and technology have come to limelight in the contemporary period on account of their remarkable achievements and that they have greatly swayed the modern civilization. The importance of the age of technology and applied sciences cannot be belittled just as the importance of the stone age cannot be decried for each age has its relative importance in the evolution of mankind. However, mankind is destined to surpass even the age of technology and applied sciences in not too distant future and it seems to be inevitable that pure sciences will reach the zenith of perfection when they get amalgamated with philosophy through the channel of general axiology if any major cataclysm does not threaten the complete extermination of mankind. A comprehensive perspective of our cosmos that is arrived at through a reunion of philosophical and scientific knowledge will radically metamorphose the present human outlook on life and reality.

INDEX

- Abiogenesis*, 74, 108
 Absolute, the, 10, 129, 181ff., 260ff., 342ff., 422ff.
 Acquired teleology, 196ff., 209ff.
 Adaptive Radiation, 87
 Alexander, S., 321ff., 400ff.
 Allport, G. W., 143-45
 Amino acids, 96, 100
 Appreciation, principle of, 171
 Aristotle, 64
 Asymmetry, 451-52
 Atom, 20, 31, 371
 Attraction, law of, 335
 Auxiliary laws, 165, 252
 Axiology, 189, 192, 269, 272
 Ayer, A.J., 444

 Baldwin, E., 99-100
 Balfour, A.J., 405
 Beadle, G.W., 95-96
 Beauty, 213, 216, 219
 Being-Becoming, 11, 342, 379
 Bergson, H., 237, 320ff., 399ff.
 Berkeley, G., 116-17
 Bernal, J.D. 93-94
 Bliss, 14
 Boas, F., 214
 Bohr, N., 23-24
 Boodin, J. E., 407
 Born, M., 34, 35
 Bosanquet, B., 128, 179, 255, 433
 Brain, 149-53
 Bradley, F. H., 125ff., 178, 254, 315, 388ff., 429ff.
 Brickner, R. M., 150
 Bridgman, W., 30, 43ff.
 Broglie, L. de, 28, 32, 34
 Brown, P., 213

 Caird, J., 406
 Cannon, W. B., 154-55
 Carnap, R., 444
 Causation, 27, 223, 231
 Cell, 78ff., 215ff., 244ff.
 Chance, 35, 67, 249
 Child, A., 268-69
 Chromosome, 72, 81, 93
 Collingwood, R. G., 287
 Colloid, 98
 Complexity, 63, 167ff.
 Conditioning, 141, 195, 212
 Construct, 48ff., 115, 124
 Conte, L., 259
 Creativity, 10ff., 168ff., 215ff., 249, 252
 Croce, B., 279, 284ff.
 Culture, 149ff., 206, 246
 Cytoplasm, 79ff.

 Darlington, C. D., 79, 96
 Darwin, C., 66ff., 72, 87
 Democracy, 456
 Democritus, 20
 Descartes, R., 111-13
 Determinism, 33ff., 120ff., 169
 Dingle, H., 334
 Dirac, P. A. M., 29
 Dobzhansky, T., 84ff., 96
 Driesch, H., 72-3

 Eddington, A. S., 30, 41ff., 336ff.
 Education, 457
 Ego, 134ff., 142ff.
 Einstein, A., 33ff., 37, 328ff.
Elan Vital, 137, 237
 Electroencephalography, 152-53
 Electron, 24ff., 32, 33
 Endocrine glands, 154
 Engles, F., 277
 Energy, 37, 56
 Entelechy, 73, 108
 Entropy, 35, 36, 38ff., 92ff.
 Environment, 222, 224, 225,
 Enzyme, 96ff., 102
 Epistemology, 159ff., 161, 168
 Euclid, 326
 Evil, 254ff.
 Evolution, 65ff., 105
 Existentialism, 443
 Expanding universe, 336ff.

 Faraday, M., 36
 Fetish, 218, 264
 Field, electromagnetic, 32, 36ff.
 Field, gravitational, 332
 Flourney, T., 365ff.
 Freedom, 220ff.
 Free-will, 26, 27
 Freud, S., 134-37
 Fundamental particles, 32, 54

 Gamow, G., 192
 Gene, 76ff., 81ff., 93ff., 95ff.

- Genotype, 66, 71, 85
 Germ plasm, 69
 God, 40, 130, 182ff., 231ff., 238ff., 253, 257, 291, 386ff.
 Goldschmidt, R. E., 80-83
 Governing law, 164ff., 252
 Green, T. H., 123-25
 Gross body, 369
 Gunn, J. A., 318

 Haldane, J. B. S., 103, 104
 Hegel, G. W., 272ff., 314ff., 387ff., 426ff.
 Heisenburg, W., 25, 27, 34, 92
 Henderson, L. J., 75-76
 Heraclitus, 454
 Heredity, 144, 155, 221, 224
 History, 163, 250, 253, 268ff.
 Hobbes, T., 229-30
 Hoernlé, R.F.A., 317
 Homeostasis, 98
 Hormone, 154
 Howison, G.H., 392ff.
 Hoyle, F., 339ff.
 Hubble, E., 336
 Hume, D., 117-19, 230
 Huxley, J., 69, 86-88, 107

Ichhāmṛityu, 378
 Immortality, 350ff.
 Indeterminism, 35ff., 60ff., 232, 250
 Indeterminacy, principle of, 25ff.
 Individuation, principle of, 175ff.
 Innate teleology, 196ff., 209ff.
 Intuition, 10, 312ff., 345ff., 348

 James, J., 36, 39, 334
 Jennings, H.S., 80, 155
 Jesus Christ, 18
 Johannsen, W.L., 71, 72
 Jung, C.G., 137

 Kant, I. 235ff., 312, 353ff., 422
 Kluckhohn, C., 145-47
 Koffka, K., 141-43

 Lamaitre, G., 38
 Lamarck, J.B., 65
 Landé, A., 34
 Lee, T.D., 192
 Leibniz, G.W., 455
 Lepeshinskaya, O., 89-90
 Leuba, J.H., 366
 Lewis, G.N., 371
 Libido, 134-38
 Light quanta, 22

 Linton, R., 147-49
 Locke, J., 113-15, 117
 Lodge, O., 363ff.
 Loeb, J., 73-5
 Logical Positivism, 444
 Love, 182, 291ff.
 Lysenko, T.D., 88-89

 Margenau, H., 47-52, 213
 Martinuau, J., 233
 Marx, K., 277ff., 440
 Mass, 37, 56
 Matter, 37, 56, 338
 McIntyre, J.L., 317
 McTaggart, J.E., 130ff., 351, 436
 Meson, 31
 Metazoa, 68, 372
 Michelson-Morley experiment, 328
 Mill, J.S., 121-22
 Mind-stuff, 42
 Morgan, L., 401, 403ff.
 Morgan, T.H., 71-72
 Mowerer, O.H., 145-47
 Muller, H.J., 76-8
 Mutation, 70, 81, 85ff., 93
 Myers, F.W.H., 364
 Myrback, K., 102

 Natural Selection, 67ff., 87ff.
 Needham, J., 100
 Nescience, 261-2, 265, 295
 Neumann, J. von, 35
 Newton, I., 325ff., 335
 Northrop, F.S.C., 27
 Nucleoproteins, 101

 Oedipus Complex, 135
 Ontology, 160ff., 443
 Operational method, 43ff., 193
 Ostwald, W., 98

 Parity Principle, overthrow of, 192
 Parmenides, 454
 Penfield, W., 150, 151
Pneuma, 64
 Personality as artist, 170, 213
 Phenotype, 66, 71
 Philosophy, 158, 189, 285, 271
 Planck, M., 22, 34
 Plato, 273, 350
 Point events, 337
 Braz, M., 217
 Primeval atom, 38
 Pringle-Pattison, A.S., 358
 Portein, 93, 99ff.
 Protoplasm, p. 79

Protozoa, 68, 372
 Psychical Research, 364
 Psychology, 193
 Psycho-physical entities, 11ff., 60ff.,
 109, 162, 166ff., 343ff., 366ff.

Quantum theory, 22ff., 35, 37

Radiation, 56

Radio-active phenomena, 21, 38

Rashdall, H., 124, 438

Reality, 12, 14, 16, 17, 168, 186, 211,
 250, 440, 442, 453ff.

Reichenbach, H., 30, 33

Relativity, theory of, 328-34

Repulsion, law of, 336

Rhine, J.B., 364

Robb, A.A., 333

Royce, J., 238-9, 318ff., 437

Russell, B., 27

Sādhana, 245, 250

Sartre, Jean-Paul, 443

Schiller, F.C.S., 258, 356ff., 394ff.

Schrödinger, E., 29, 34, 92ff.

Science, 2, 188ff.

Scotus, D., 176

Self, 111ff.

Self-determinism, 234ff.

Sharp, L.W., 78-9

Sheard, C., 91

Sherrington, C., 97

Simon, M., 214

Smith, E., 214

Sinha, A.K., 433

Sinha J., 410

Sitter, de, 335

Souvenir, 216, 218, 219, 264

Space-Time, 37, 312ff.

Spencer, H., 423

Spengler, O., 280ff.

Spinoza, B., 231-32

Staddler, L.J., 83

State, 251, 283, 302, 308, 456

Steady-state universe, 339

Stoddard, G.D., 151, 155ff.

St. Thomas, 175-76

Subject, 120ff.

Substance, material, 116

Substance, spiritual, 112, 117, 121

Subtle body, 369

Sullivan, J.W.N., 26, 42, 213

Sumner, J.B., 102

Super-ego, 134ff. 136

Symmetry, 451-52

Tabula rasa, 113, 225

Taylor, A.E., 435

Teleology, 109, 164, 193, 197, 200ff.

Temple, W., 229

Thermodynamics, law of, 38, 39

Thompson, J.J., 31

Toynbee, A.J., 290ff.

Unified Field theory, 38, 334

Value, 216ff.

Verifact, 49

Veries, de, 70ff.

Waddington, C.H., 83-84

Ward, J., 354ff., 396ff., 439

Watson, J.B., 139-41, 220 222

Wave, 32

Weismann, A., 68-9, 90

Weyl, H., 37

Will-to-exist, 1, 242

Will-to-create, 1

Will-to-know, 1, 225, 242

Wittgenstein, L., 444

Yang, C.N., 192

Yogin, 365, 378, 379

Zeno, 54

Zeus, 14

